United States Department of Agriculture

Soil Conservation Service

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State Soil Geographic Data Base (STATSGO)

Data Users Guide

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Contents

Introduction

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) has the Federal leadership for the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining, and distributing soil survey information for privately owned lands in the United States.

Soil Geographic Data Bases

SCS has established three soil geographic data bases representing kinds of soil maps. Each data base has a common link to an attribute data file for each map unit component. The soil interpretations record data base provides the attribute data for each geographic data base.

The three soil geographic data bases include the Soil Survey Geographic Data Base (SSURGO), the State Soil Geographic Data Base (STATSGO), and the National Soil Geographic Data Base (NATSGO). Components of map units in each data base are generally phases of soil series that enable the most precise interpretation. Interpretations are displayed differently for each geographic data base to be consistent with differing levels of detail. The soil interpretations record data base contains physical and chemical soil properties for approximately 18,000 soil series recognized in the United States.

The most detailed level of information is SSURGO, which was designed primarily for farm and ranch, landowner/user, township, county, or parish natural resource planning and management. Using the soil attributes, this data base serves as an excellent source for determining erodible areas and developing erosion control practices, reviewing site development proposals and land use potential, making land use assessments, and identifying potential wetlands and sand and gravel aquifer areas.

Using NCSS mapping standards, soil maps in the SSURGO data base are made using field methods. Surveyors observe soils along delineation boundaries and determine map unit composition by field traverses and transects. Aerial photographs are interpreted and used as the field map base. Maps are made at scales ranging from 1:12,000 to 1:62,500. Typically scales are 1:15,840, 1:20,000, or 1:24,000. The maps, along with comprehensive descriptions, produce an attribute and spatial data base for NCSS soil survey publications.

Line segments (vectors) are digitized in accordance with SCS-established specifications and standards for duplicating the original soil survey map. The mapping bases are normally orthophotoquads, and digitizing is performed by SCS or by cooperating Federal, State, and local governments.

Data for SSURGO are collected and archived in 7.5-minute topographic quadrangle units and distributed as complete coverage for a soil survey area usually consisting of 10 or more quadrangle units. The adjoining 7.5-minute units are matched within the survey areas.

The STATSGO was designed to be used primarily for regional, multi-state, river basin, State, and multicounty resource planning, management, and monitoring. STATSGO data are not detailed enough to make interpretations at a county level.

Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. Where more detailed soil survey maps are not available, data on geology, topography, vegetation, and climate are assembled, together with Land Remote Sensing Satellite (LANDSAT) images. Soils of like areas are studied, and the probable classification and extent of the soils is determined.

Map unit composition for STATSGO is determined by transecting or sampling areas on the more detailed maps and expanding the data statistically to characterize the whole map unit.

Using U.S. Geological Survey's (USGS) 1:250,000-scale, 1- by 2-degree quadrangle series as a map base, the soil data are digitized by line segment (vector) to comply with national guidelines and standards.

Data for STATSGO are collected and archived in 1- by 2-degree topographic quadrangle units and distributed as complete coverage for a State, and the adjoining 1- by 2-degree units are matched both within and between States.

The NATSGO is used primarily for national and regional resource appraisal, planning, and monitoring. The boundaries of the major land resource areas (MLRA) and regions were used to form the NATSGO data base [7].* The MLRA boundaries were developed primarily from State general soil maps.

Map unit composition for NATSGO was determined by sampling done as part of the 1982 National Resources Inventory [8]. Sample data were expanded for the MLRA's, with sample design being statistically significant to State parts of the MLRA's.

The NATSGO map was compiled on an SCS-adapted version of the 1970 Bureau of Census automated State and county map data base and it was digitized from the USGS 1:5,000,000-scale U.S. base map.

This document describes the STATSGO data, which provide national coverage at a scale of 1:250,000, except for Alaska, which is at a scale of 1:2,000,000.

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*Bracketed numbers correspond to numbered reference list.

Using Soil Maps

A soil map in a soil survey is a representation of soil patterns in a landscape. The scale of the map and the complexity of the soil patterns determine what can be shown on the soil map. In designing soil surveys, the projected uses of the survey and the complexity of the soil patterns largely determine the scale of the soil map [5].

When using soil maps, remember that scale, accuracy, and detail are not synonymous. Scale is the relationship between corresponding distance on a map and the actual distance on the ground. Accuracy is the degree or precision with which map information is obtained, measured, and recorded, and detail is the amount of information shown.

Map scale, accuracy, and detail are interrelated. A large-scale map is not necessarily more accurate or more detailed than a small-scale map; however, it generally shows more detail than a small-scale map. Soil maps are made by using field investigation methods. The accuracy of the maps is determined by many factors, including the complexity of the soils, design of the soil map units, intensity of field observations and data collection, and skills of the mapper.

A soil map at 1:250,000 scale should not be used to locate soils for intensive land uses, such as determining suitability for house lots. It is useful for understanding the soil resources and for planning broad use in a State or region. A soil map at 1:20,000 scale is useful in understanding and planning the soil resources of fields, farms, and communities, but it is not useful for planning small (less than 1 acre) research plots. In many places the pattern of soils is very complex, and in some places soils grade imperceptibly to others. Because of this, soil delineations, even on large-scale maps, are not homogeneous or pure; thus, onsite investigations are needed to determine, for example, the suitability of a plot for a septic tank installation when using a soil map at scale of 1:20,000.

The common practice of enlarging soil maps does not result in more detailed or accurate maps. Soil survey maps enlarged to 1:12,000 scale from 1:20,000 scale are no more accurate or detailed than the original 1:20,000 map.

Many times the information on soil maps is transferred to other base maps at different scales, which diminishes the new map's accuracy, especially if the base map is not planimetrically correct.

Soil interpretive maps for specific uses are commonly made from the soil maps. These kinds of maps are single purpose and have the same credibility and limitations as the soil maps from which they are made.

It is important to recognize the different kinds of soil maps, know their merits and limitations, and understand the relationship of map scale, accuracy, and detail.

Use of STATSGO Data

STATSGO Interpretive Maps

In a detailed (SSURGO) soil map, each map unit is usually represented by a single soil component, typically a soil series phase. Some SSURGO map units may have up to three named components. An interpretive map is normally made by classifying each unit according to the set of soil properties for a single component. On a STATSGO map, in contrast, each map unit contains up to 21 components for which there are attribute data, but there is no visible distinction as to the location of these components within the delineation. Thus, to present information on an attribute, a series of maps must be used to portray the more complex set of available information.

The legend for STATSGO interpretive maps commonly shows the percentage of the map unit that meets a criterion or criteria. (See page 8.) Care must be used in evaluating the statistics presented in such a legend. Percentage ranges given represent all delineations in that class and do not represent an individual STATSGO delineation. Percentages do not statistically represent a subset of the delineation, for instance, a county portion. They also do not represent the areas of the soil components that satisfy the criterion. However, the area of each map unit component is recorded in the data base and can be used to produce a table, even though the components cannot be displayed directly on the map.

Using STATSGO Data With Other Data

When STATSGO data are overlayed with other data such as land use data, statistics on the co-occurrence of the land use data with the soil data must be interpreted carefully. The composition of the STATSGO map unit can be characterized independently for the land use and for the soil component, but there are no data on their joint occurrence at a more detailed level. Analysis of the overlayed data should be on a map polygon basis. It would be incorrect to assign land use attributes to the soil components by multiplying the proportions of soil components by the proportions of land uses.

Additional political, watershed, or other boundaries may be intersected with the soil data. Although the composition of each political and watershed unit may be described in terms of the STATSGO map units, information is not available to assign the components to the boundary units with full accuracy. As with the land use categories, the analysis should be restricted to the classified components.

Visual orientation can be provided by using additional data files. For STATSGO interpretative maps and many natural resource purposes, a shaded relief background can provide visual reference of the topography that is easily understood. An example is the shaded relief background image from USGS Digital Elevation Model data, which is

formatted in 1:250,000-scale, 1- by 2-degree quadrangles [2]. Other data types, such as USGS Digital Line Graph for transportation or hydrography, can be used to help orient a reader to a map [4]. If transportation or hydrography data need to be incorporated into an analysis, it may be desirable to create a buffer zone around the linear feature and then use an overlay operation to intersect the resulting corridor area with the interpreted soil map.

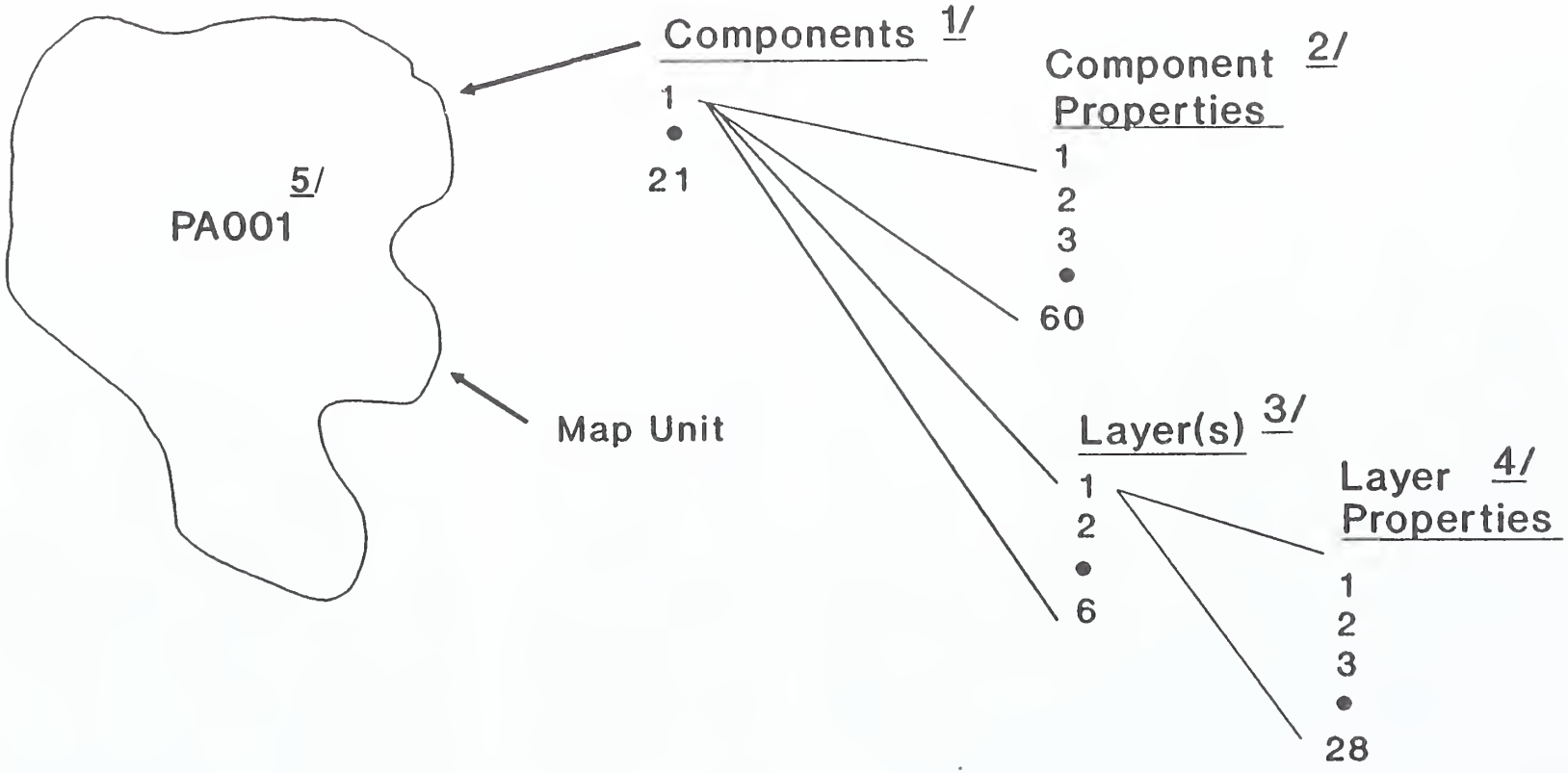
Complex models can be constructed using the soil attribute data in conjunction with other data sources. The model output can be displayed in map form using a geographic information system. Examples include soil erosion, soil leaching potential, and land use suitability models. Calculations are typically made on the basis of each component soil phase. For example, in an erosion model, the slope and erodibility (k-factor) are extracted for each soil phase. The results of the calculation for each component can then be displayed in map form using the percentage composition techniques discussed earlier [1].

Analysis of STATSGO Data

In STATSGO, each map unit can have multiple components and each component can have multiple layers (fig. 1). Therefore, the analysis must begin at the lowest level in the schema and work back to the highest level. The order from the bottom to the top is layer, comp (component), and map unit tables. The layer table is related to the comp table by muid (map unit identifier) and seqnum (sequum number), which is the component number. The comp table is related to the map unit table by muid and the map unit table is related to the map data by muid. Other tables such as compyld (component yield), interp (interpretation), plantcom (plant community), rsprod (range site productivity), taxclass (taxonomic class), windbrk (windbreak), wlhabit (wildlife habitat), and woodmgt (woodland management) are on the same level with comp and relate to the comp table with muid and seqnum.

Since there are several layers in the layer table for each component in the comp table, a decision must be made as to how the data should be handled. One method is to select the surface layer for organic matter which has a low and a high value that can be averaged (oml + omh/2). Another method is to aggregate the data in the layers. Available water capacity is an example. Once again, there is a low and high value that can be averaged, multiplied by the layer thickness, and then summed, reducing a many-to-one relationship to a one-to-one relationship. An example of layer aggregation follows. Layer@ holds the results from the weighted average and the sum is shown in layer@ at the bottom of each component.

Figure 1.—STATSGO MAP UNIT



1/ STATSGO map units consist of 1 to 21 components.
2/ For each component, there are 60 soil properties and interpretations in 84 different data elements (component tables); for example, flooding.
3/ There are 1-6 soil layers for each component.
4/ There are 28 soil properties for each layer; for example, percent clay.
5/ A symbol created by concatenation of the two-character State FIPS code and a three-digit Arabic number. It uniquely identifies a map unit within a State.

LAYER TABLE (selected attributes and four components in muid KS001)

muid	seqnum	layernum	laydepl	laydeph	awcl	awch	layer@
KS001	1	1	0	10	0.22	0.24	2.3
KS001	1	2	10	40	0.18	0.20	5.7
KS001	1	3	40	60	0.20	0.22	4.2
							12.2
KS001	2	1	0	15	0.10	0.12	1.7
KS001	2	2	15	25	0.08	0.10	0.9
KS001	2	3	25	68	0.08	0.10	3.9
							6.5
KS001	3	1	0	10	0.08	0.10	0.9
KS001	3	2	10	20	0.10	0.14	1.2
							2.1
KS001	4	1	0	15	0.20	0.24	3.3
KS001	4	2	15	25	0.22	0.24	2.3
							5.6

The layer table is related to the comp table by muid and seqnum and the sum of the weighted average is calculated into comp@ in the comp table from layer@ in the layer table. The sum of the weighted average is the total inches of water available in the soil profile. Next, a category code that is based on the sum of the weighted averages is assigned. Available water capacity categories commonly used by SCS [3] are as follows:

1	very low	0 to 3 inches
2	low	3 to 6 inches
3	moderate	6 to 9 inches
4	high	9 to 12 inches
5	very high	>12 inches

A category code is assigned beginning with 1 for "very low" and ending with 5 for "very high." Comp@1 in the following comp table shows the results. For example, in muid KS001, which consists of four components, 40 percent of the map unit would be in category 5, 30 percent in category 3, 20 percent in category 2, and 10 percent in category 1. None of the components falls into category 4.

COMP TABLE (selected attributes)

muid	seqnum	comp@	comp@1	comppct
KS001	1	12.2	5	40
KS001	2	6.5	3	30
KS001	3	2.1	1	10
KS001	4	5.6	2	20

The next step is to aggregate the sum of the comppcts (component percents) for each category by muid into the map unit table. Once again, there is a many-to-one relationship. With STATSGO data, it is impossible to display all of the results of the analyses on one map, so a series of maps is generated, one for each category. Since five categories have been defined for available water capacity, up to five maps may be generated. The comp table is related to the map unit table by muid, and the sum of the comppcts will be moved into pct1, pct2, pct3, pct4, and pct5 in the map unit table. Pct1 corresponds to category 1 and pct5 corresponds to category 5.

MAP UNIT TABLE (selected attributes)

muid	pct1	pct2	pct3	pct4	pct5
KS001	10	0	50	0	40

The legend for STATSGO maps is commonly in terms of percent of the map unit that meets a criterion or criteria. In this example, four classes are defined as follows:

0 to 25 percent	51 to 75 percent
26 to 50 percent	76 to 100 percent

A class code is assigned to each of the four classes defined above, beginning with 1 for "0 to 25 percent" and ending with 4 for "76 to 100 percent." If water areas are included in the map data, then water could be assigned a class code of 5. The results of applying the classes to the data in pct1 through pct5 are shown in map1 through map5 as follows.

MAP UNIT TABLE (selected attributes)

muid	pct1	pct2	pct3	pct4	pct5	map1	map2	map3	map4	map5
KS001	10	0	50	0	40	1	1	2	1	2

The map unit table is related to the map data by muid and the codes in map1 through map5 are moved to the map data. The results are shown in the following table. The codes can then be linked to a color lookup table for the polygon shading on the map.

MAP DATA TABLE (selected attributes)

muid	map1	map2	map3	map4	map5
KS001	1	1	2	1	2

This is a brief description of how one attribute at the layer table level is handled. Even though the logic is the same, the process becomes more complicated when several attributes from different tables are being evaluated. An example would be pesticide leaching potential that would involve organic matter and surface layer thickness from the layer table and hydrologic groups from the comp table.

Data Collection

Specifications Used for Compiling STATSGO

Compilation Procedures

Draft soil map unit lines using available references such as soil survey maps, published and unpublished; county general soil maps; State general soil maps; State major land resource area (MLRA) maps; and LANDSAT images.

Draft soil map unit lines and symbols in red pencil on the Mylar overlay, which is punch-registered to fit the USGS base map Mylar. Do not transfer the USGS border neatline to the overlay as it will be added during the digitizing process. The pencil intensity should be consistent to facilitate scanner digitizing.

Map Units

Map unit delineations.--Approximate minimum area to be delineated is 625 hectares (1,544 acres), which is represented on a map of 1:250,000 scale by an area appropriately 1 cm by 1 cm (0.4 inch by 0.4 inch). Linear delineations should not be less than 0.5 cm (0.2 inch) in width. The number of delineations per 1:250,000 quadrangle should range from 100 to 200, but a range of up to 400 is allowed.

Map unit delineations must join at State boundaries and composition of map units must be coordinated across State boundaries, not only in the identity, but also in the relative extent of each component.

Components. Map units should be a combination of associated phases of soil series. The information about map units is to include reliable estimates of the components and the percentage and method by which the composition is determined. Composition can be determined by transecting representative segments of map units in published or unpublished soil surveys and documenting component composition or by using acreage data in the map unit use file. Transects may be observed in the field; however, it is more likely that they will be located and examined on soil survey field sheets or in published soil surveys. A suggested procedure consists of four steps.

First, transects should be plotted on the general soil map so that they afford complete and representative coverage of the respective map unit. Plot transects on published soil survey atlas sheets or unpublished soil survey field sheets so that they cut across the more detailed delineations that make up the corresponding map unit on the general soil map. Based on the judgment of the soil scientist, they should be located to intersect delineations of soils most representative of the map unit when subsequently plotted on the published atlas sheets or field sheets for measuring. Generally, transects are located at right angles to drainage patterns, include the complete range in elevation, and represent the typical landscape. Transects also include and represent uniform space across the delineated map

unit. All map units should be sampled by transects. The number of transects being used are proportional to the relative size, number, and complexity of the delineations. SCS State staffs should submit their verification procedures to their National Technical Center (NTC) with the compiled maps for review.

Then, on the atlas or field sheets, measure and record the length of the segments of each map unit along the transect crossing the detailed soil map.

Next, combine data on segment lengths for all delineations of each map unit. Using routine correlation procedures, determine which map components from the atlas or field sheets can be combined and make combinations so that not more than 21 phases of soil series or comparable detailed units are identified as components of the map unit on the general soil map.

Finally, determine the percentage of the general soil map unit occupied by each component by the percentage of the total length of the transects crossing the area of the general soil map unit.

Procedures Used for Digitizing STATSGO

The following map features are digitized and named line features: soil boundaries, map neatline, water boundaries (shoreline), and State boundary. Point features include soil map symbols (the 2-alpha character State code followed by a 3-digit-Arabic number bode beginning with 001), e.g., KS001.

Soil boundaries. Digitize all soil boundaries within a .010-inch line width following the center line of the original soil boundary. Represent each soil boundary with no greater number of coordinate pairs than is necessary within the .010-inch accuracy limit.

All beginning and ending points of each digitized line will either:

(1) Connect as a common point of intersection with another soil boundary, water boundary, limit of soil survey boundary, or the map neatline; or

(2) In the case of an "island," which does not connect or intersect with another soil boundary, digitize as two lines, starting and ending at two independent coordinate points.

Limit of soil survey and water boundaries. Limit of soil survey and water boundaries must meet the same .010-inch accuracy standard as soil boundaries.

Map neatline. The map neatline is considered a soil boundary and forms the maximum extent of the digital data set. Construct the map neatline as four separate straight line boundary segments. The beginning and ending point of each neatline will be identical to the four corner coordinate values of the 1- by 2-degree quadrangle.

These values must be explicitly entered and not digitized. The 7.5-minute tic marks are also entered.

Soil boundaries intersecting the map neatline must have a common point of intersection and must not extend beyond or fall short of the map neatline.

Soil map symbols. The soil map symbols will be identical to those shown on the original soil map (e.g., PA001). Position the soil map symbol so that it begins within the soil area. Use the lower left corner of the first character of the symbol as the test origin.

Soil areas missing a soil map symbol should be labeled "XXX" until the symbol is determined. Areas outside the limit of the soil survey boundary but within the neatline are to be named "NODATA." Water areas are to be named "W" and to be preceded by the State code (e.g., PAW).

Edge matching. The soil boundaries ending at all four edges of each quadrangle should be computer-joined to any adjoining map sheets to achieve an exact match. However, if this is not possible due to system limitations, match the soil boundaries on the adjoining quadrangles within .010 inch, center line to center line. Check the adjoining map sheets before digitizing and revise, if necessary, to ensure that lines and boundaries match.

Acreage calculations. Develop acreage calculations and a total polygon count for each soil map data set on each 1:250,000 quadrangle.

Print a computer-generated hard copy of the accurate calculations from each soil map data set. Sort the records by soil map symbol, water, and blank or NODATA. Show the acreages to the nearest acre, as shown below:

PA001	27,081
PA002	2,371
PA003	289,688
NODATA	3,067
PAW	532
Total Acres	--------
Total Polygons	----

Calculate the total acreage within the map neatline, including the areas outside the limit of the soil survey that are labeled Blank or NODATA, and summarize the acreages.

Editing. A complete and detailed edit of the digitizing work is required. The State soil scientist is responsible for ensuring that the digital soil data match the original soil survey. The digitized soil data must be carefully checked against the original soil maps to ensure that all data are correctly and completely digitized.

(1) Generate the check plot with either ball pen (standard point) or wet ink, using a .010-inch line width on Mylar material. Plot all data within .005 inch of its coordinate location in the data base.

(2) Plot soil map symbols as a line of single-stroke characters, height and width of 0.10 inch. The soil map symbols should duplicate the sequence of the original soil maps. The digital origin points for the soil map symbols shall not appear on the check plots.

(3) Plot soil boundaries, neatlines, limit of soil survey boundaries, and soil map symbols in black; water boundaries and water area names in blue; and special soil features and labels in green. Soil symbols that are unidentifiable and labeled as XXX are to be plotted in red.

(4) Label the check plot with the appropriate data set name and plotting scale at some point beyond the data set limits.

(5) Check plots are to be free of dirt, smudges, scratches, and other defects.

Quality Control

Check plot requirements. Plot a computer check plot for each digitized soil map data set at the same scale and map projection as the original soil map sheet. The check plots are to accurately represent the data on the magnetic tape data sets.

A complete preliminary edit should be completed of the first two adjoining maps, digitized and forwarded to the SCS National Cartographic Center (NCC) for its review. Materials needed are:

- The check plots
- The digital data sets on magnetic tape
- One summary acreage calculation with a total polygon count for each map sheet
- All of the original source materials

Data Structure

Spatial Data

Identification codes and labels. The following identification codes and special soil feature labels are used for the line, point, and feature data files:

TYPE FILE	DESCRIPTION	FEATURE LABELS
Line	Soil boundary	---
Line	Water boundary	---
Line	Map neatline	---
Line	Edge of Coverage	---
Point	Soil map symbol	PA001
	Water	PAW
	Area beyond coverage	NODATA or BLANK

"---" means not applicable.

A soil map data set corresponds to one 1:250,000 quadrangle area and consists of up to three separate files produced in consecutive order as follows:

(1) Header file
(2) Line file
(3) Point file

A file contains multiple records and is considered at end when an end-of-file mark is found.

Header file. Describes the contents of the data set for reference purposes. Each digital data set is identified within the header file, using the name of the quadrangle map. The header file does not require the extraction of data from other files.

Line file. Contains soil and water boundaries, limit of soil survey boundaries, and map neatlines.

Point file. Contains locations for soil map symbols and special soil point feature labels.

Data file format (USGS Digital Line Graph Optional [DLG-3 optional]). Stores and exchanges digital soil map data.

ASCII Symbol Conversion file. Follows each map data set if the DLG-3 optional file does not contain major/minor pairs. One record is required for each area in the following format:

1. PA005
2. PAW
3. PA039

If the DLG-3 optional file contains major/minor pairs, an ASCII symbol conversion file will follow the last map data set on the tape or will reside on a separate tape. Similar map units in the map sets will have the same minor code, so the symbol conversion file will be a universal conversion legend with the following format:

1. PA001
2. PA002
3. PA003

Attribute Data

Relational Data Base Schema

COMPONENT TABLES

Table: interp

muid	char
seqnum	int
grpcode	char
rating	char
restct1	char
restct2	char
restct3	char

Table: forest

muid	char
seqnum	int
plantsym	char
plantcov	int

Table: woodland

muid	char
seqnum	int
suitcode	char
plantsym	char
sitind	int
woodprod	int

Table: woodmgt

muid	char
seqnum	int
ordsym	char
wderosn	char
wdequip	char
wdseed	char
wdwind	char
wdplant	char

Table: comp

muid	char
seqnum	int
comppct	int
slopel	int
slopeh	int
surftex	char
otherph	char
compkind	char
clascode	char
anflood	char
anflodur	char
anflobeg	char
anfloend	char
gsflood	char
gsflodur	char
gsflobeg	char
gsfloend	char
wtdepl	float
wtdeph	float
wtkind	char
wtbeg	char
wtend	char
pnddepl	float
pnddeph	float
pnddur	char
pndbeg	char
pndend	char
rockdepl	int
rockdeph	int
rockhard	char
pandepl	int
pandeph	int
panhard	char
subinitl	int
subinith	int
subtotl	int
subtoth	int
hydgrp	char
frostact	char
drainage	char
hydric	char
corcon	char
corsteel	char
clnirr	char
clirr	char
sclnirr	char
sclirr	char
primfml	char

COMPONENT TABLES, cont.

Table: rsprod

muid	char
seqnum	int
rsid	char
rsname	char
prodfav	int
prodnorm	int
produnfv	int

Table: plantcom

muid	char
seqnum	int
plantsym	char
plantpct	int

Table: windbrk

muid	char
seqnum	int
plantsym	char
wndbrkht	int

Table: wlhabit

muid	char
seqnum	int
wlgrain	char
wlgrass	char
wlherb	char
wlhard	char
wlconif	char
wlshrub	char
wlwetplt	char
wlshlwat	char
wlopen	char
wlwood	char
wlwet	char
wlrange	char

Table: compyld

muid	char
seqnum	int
cropname	char
nirryld	float
irryld	float

MAP UNIT TABLES

Table: map unit

muid	char
mukind	char
mlra	char
muacres	int

LOOKUP TABLES

Table: taxclass

clascode	char
class	char
order	char
suborder	char
grtgroup	char
subgroup	char
partsize	char
minalogy	char
reaction	char
soiltemp	char
otherfam	char

Table: yldunits

cropname	char
yldunits	char

Table: plantnm

plantsym	char
sciname	char
comname	char

LAYER TABLE

Table: layer

muid	char
seqnum	int
layernum	int
layerid	int
laydepl	int
laydeph	int
texture	char
kfact	float
kffact	float
tfact	int
weg	char
inch10l	int
inch10h	int
inch3l	int
inch3h	int
no4l	int
no4h	int
no10l	int
no10h	int
no40l	int
no40h	int
no200l	int
no200h	int
clayl	int
clayh	int
lll	int
llh	int
pil	int
pih	int
unified	char
aashto	char
aashind	float
awcl	float
awch	float
bdl	float
bdh	float
oml	float
omh	float
phl	float
phh	float
salinl	int
salinh	int
sarl	float
sarh	float
cecl	float
cech	float
caco3l	int
caco3h	int
gypsuml	int
gypsumh	int
perml	float
permh	float
shrinksw	char

Data Voids

Attribute data for some data elements may be incomplete or missing for certain portions of the United States. For example, data were not available for forest and range productivity for some STATSGO map units on U.S. Department of Agriculture Forest Service lands in some Western States. In instances where data are unavailable, a mask should be used to exclude the area from analysis.

Map Hard Copy Production

Maps that use SCS STATSGO data must show the source and date. The maps should also contain the following notation:

> "The soil information used for this map was Soil Conservation Service 199_ STATSGO data. STATSGO was compiled at 1:250,000 and designed to be used primarily for regional, multistate, State, and river basin resource planning, management and monitoring."

User Support

The user should be knowledgeable of soils data. If you need assistance, contact an SCS soil scientist for help. The following is a listing of SCS State soil scientist addresses and telephone numbers:

665 Opelika Rd.
P.O. Box 311
Auburn, AL 36830
(205) 887-4540

655 Parfet Street, Rm. E200C
Lakewood, CO 80215-5517
(303) 236-2910

949 East 36th Avenue
Anchorage, AK 99508-4302
(907) 271-2424

16 Professional Park Rd.
Storrs, CT 06268-1299
(203) 487-4047

Suite 200
201 E. Indianola Ave.
Phoenix, AZ 85012
(602) 640-5124

1203 College Park Drive
Dover, DE 19901-7377
(302) 678-4179

Federal Office Bldg.
Rm. 5404
700 West Capitol Ave.
Little Rock, AR 72201
(501) 324-5410

Federal Bldg., Room 248
401 S.E. 1st Ave.
Gainesville, FL 32601
(904) 377-1092

2121-C Second Street
Davis, CA 95616
(916) 757-8270

Federal Bldg., Box 13
355 East Hancock Ave.
Athens, GA 30601
(404) 546-2278

Pacific Basin Office
Suite 602, CGIC Bldg.
414 W. Soledad Ave.
Agana, Guam 96910

300 Ala Moana Blvd.
Room 4316
P. O. Box 50004
Honolulu, HI 96850
(808) 541-2605

3244 Elder Street
Room 124
Boise, ID 83705
(208) 334-1348

1902 Fox Drive
Champaign, IL 61820
(217) 398-5286

6013 Lakeside Blvd.
Indianapolis, IN 46278
(317) 290-3203

693 Federal Bldg.
210 Walnut Street
Des Moines, IA 50309
(515) 284-4353

760 South Broadway
Salina, KS 67401
(913) 823-4558

771 Corporate Drive
Lexington, KY 40503
(606) 224-7358

3737 Government Street
Alexandria, LA 71302
(318) 473-7787

5 Godfrey Drive
Orono, ME 04473
(207) 866-7245

Busch's Frontage Road
Annapolis, MD 21401
(410) 757-2872

451 West Street
Amherst, MA 01002
(413) 253-4370

Room 101
1405 S. Harrison Road
East Lansing, MI 48823-5202
(517) 337-6701, Ext. 1205

375 Jackson Street, Room 600
St. Paul, MN 55101-1854
(612) 290-3679

Federal Bldg, Suite 1321
100 West Capitol Street
Jackson, MS 39269
(601) 965-5193

601 Business Loop 80 West
Columbia, MO 65203
(314) 876-0907

Federal Bldg., Room 443
10 East Babcock Street
Bozeman, MT 59715-4704
(406) 587-6818

Federal Building, Room 152
100 Centennial Mall North
Lincoln, NE 68508-3866
(402) 437-5322

5301 Longley Lane
Reno, NV 89511
(702) 784-5875

Federal Building
Durham, NH 03824
(603) 868-7581

1370 Hamilton Street
Somerset, NJ 08873
(908) 246-4110, Ext. 170

517 Gold Avenue, SW
Room 3301
Albuquerque, NM 87102
(505) 766-3277

James M. Hanley Fed. Bldg.
Room 171
100 S. Clinton Street
Syracuse, NY 13260-7248
(315) 423-5510

4405 Bland Rd.
Suite 205
Raleigh, NC 27609
(919) 790-2905

200 E. Rosser Avenue
Bismarck, ND 58502-1458
(701) 250-4435

200 North High Street
Columbus, OH 43215
(614) 469-6914

USDA Agricultural
Center Bldg.
Stillwater, OK 74074
(405) 624-4448

Federal Bldg, Room 1640
1220 S.W. Third Avenue
Portland, OR 97204
(503) 326-2794

One Credit Union Place
Suite 340
Harrisburg, PA 17710-2993
(717) 782-3889

150 Carlos A. Chardon Avenue
Hato Rey, PR 00918-7013
(809) 766-5206

60 Quaker Lane
West Warwick, RI 02886
(401) 828-1300

1835 Assembly Street
Room 950
Strom Thurmond Federal Bldg.
Columbia, SC 29201
(803) 253-3896

Federal Building
200 4th Street S.W.
Huron, SD 57350-2475
(603) 353-1810

675 Estes Kefauver, FB-USCH
801 Broadway
Nashville, TN 37203
(615) 736-5476

W. R. Poage Federal Bldg.
101 S. Main Street
Temple, TX 76501-7682
(817) 774-1261

Wallace F. Bennett
Federal Bldg., Room 4402
125 So. State Street
Salt Lake City, UT 84138
(801) 524-5064

69 Union Street
Winooski, VT 05404
(802) 951-6795

Federal Building, Rm. 9201
400 North 8th Street
Richmond, VA 23240-9999
(804) 771-2463

Rock Pointe Tower II,
Suite 450
W. 316 Boone Avenue
Spokane, WA 99201-2348
(509) 353-2339

75 High Street, Room 301
Morgantown, WV 26505
(304) 291-4484

6515 Watts Road, Suite 200
Madison, WI 53719-2726
(608) 264-5589

Federal Office Bldg.
100 East B Street, Rm. 3124
Casper, WY 82601
(307) 261-5208

Distribution

Source

National Cartographic Center
U.S. Department of Agriculture
Soil Conservation Service
P.O. Box 6567
Fort Worth, TX 76115
(817) 334-5559

Format

The STATSGO spatial data are available in USGS Digital Line Graph (DLG-3) optional format. Map unit symbols (e.g., PA001) are not normally carried within the DLG-3 Optional formatted data; however, these map symbols are made available as a separate and unique ASCII file.

The STATSGO attribute data are stored in a relational data base format which is a nonfixed-length, tab-delimited ASCII file.

The SCS National Cartographic Center (NCC) operates a Geographic Resource Analysis Support System (GRASS) Geographic Information System (GIS) and an ARC/INFO GIS. SCS-GRASS and other formats may be made available by mutual agreement.

The STATSGO spatial and attribute data are distributed as one data set and are stored by USGS 1:250,000 1- by 2-degree quadrangle and distributed for a full State.

Medium

The distribution medium for spatial and attribute data will normally be 9-track magnetic tape at 1600 bits per inch, but may be cartridge tape by mutual agreement.

Ordering

Before ordering STATSGO data, the user needs to identify the State(s) of interest and may wish to consult a USGS index to the 1:250,000 base map series to ensure coverage. Additional information and costs may be obtained from NCC.

The STATSGO data are periodically updated, data files are dated, and users are responsible for obtaining the latest version.

References

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[7] U.S. Department of Agriculture. 1981. Land resource regions and major land resource areas of the United States. U.S. Dep. Agric. Handb. 296, 156 pp. illus.

[8] U.S. Department of Agriculture and Iowa State University Statistical Laboratory. 1987. Basic Statistics 1982 National Resources Inventory. Statistical Bulletin No. 756, 153 pp.

Appendix

Data Dictionary Part I Definition of Soil Data Elements

ELEMENT	TABLES	LONG NAME	DESCRIPTION
aashind	layer	AASHTO Group Index	AASHTO (American Assoc. of State Highway and Transportation Officials) group index. A modification to AASHTO group classification of a soil.
aashto	layer	AASHTO Group Classification	AASHTO (American Assoc. of State Highway and Transportation Officials) group classification. A code for AASHTO group classification for a soil.
anflobeg	comp	Annual Flooding Month Begin	Month in which annual flooding (flooding likely to occur during the year) begins in a normal year.
anflodur	comp	Flood Duration Class	The duration of annual flooding in a normal year.
anfloend	comp	Annual Flooding Month End	Month in which annual flooding (flooding likely to occur during the year) ends in a normal year.
anflood	comp	Annual Flooding Frequency	Descriptive term used to describe the frequency of annual flooding (flooding likely to occur during the year) that is likely to occur Frequent (FREQ) - > 50% chance of flooding;Occasional (OCCAS) - 5-50% chance of flooding; Rare (RARE) - 0-5% chance of flooding.
awch	layer	Available Water Capacity	Maximum value for the range of available water capacity for the soil layer or horizon expressed as inches/inch.

awcl	layer	Available Water Capacity	Minimum value for the range of available water capacity for the soil layer or horizon, expressed as inches/inch.
bdh	layer	Bulk Density	Maximum value for the range in moist bulk density of the layer or horizon, expressed as grams per cubic centimeter.
bdl	layer	Bulk Density	Minimum value for the range in moist bulk density of the soil layer or horizon, expressed as grams per cubic centimeter.
caco3h	layer	Carbonate as CaCO3	Maximum value for the range of calcium carbonate (CaCO3) in the soil layer or horizon, expressed as a percent.
caco3l	layer	Carbonate as CaCO3	Minimum value for the range of calcium carbonate (CaCO3) in the soil layer or horizon, expressed as a percent.
cech	layer	Cation Exchange Capacity	Maximum value for the range in cation exchange capacity for the soil layer or horizon.
cecl	layer	Cation Exchange Capacity	Minimum value for the range in cation exchange capacity for the soil layer or horizon.
clascode	comp taxclass	Taxonomic Classification Code	Code for the taxonomic classification for the soil. Definitions of codes are in the taxclass table.
class	taxclass	Taxonomic Classification	The taxonomic classification (name) of the soil.
clayh	layer	Clay	Maximum value for the range or horizon, expressed as a percentage of the material less than 2 mm in size.
clayl	layer	Clay	Minimum value for the range in clay content of the soil layer or horizon, expressed as a percentage of the material less than 2 mm in size.

clirr	comp	Irrigated Capability Class	Irrigated Capability Class. A rating of the soil for irrigated agricultural use. The number indicates progressively greater limitations and narrower choices for use.
clnirr	comp	Nonirrigated Capability Class	Nonirrigated Capability Class. A rating of the soil for nonirrigated agricultural use. The number indicates progressively greater limitations and narrower choices for use.
comname	plantnm	Plant Common Name	The common name for the plant most widely used by the State.
compkind	comp	Kind of Component	Code identifying the kind of component of the map unit. Example: Series (S); Family (F); Variant (V); Taxadjunct (T); Taxon above family (G); Miscellaneous area (M).
compppct	comp	Component Percent	The percentage of the component of the map unit.
corcon	comp	Corrosion - Concrete	An interpretation rating of the susceptibility of concrete to corrosion when in contact with the soil.
corsteel	comp	Corrosion - Uncoated Steel	An interpretation rating of the susceptibility of uncoated steel to corrosion when in contact with the soil.
cropname	compyld yldunits	Crop Name	The common name for the crop for which a yield is given.

drainage	comp	Soil Drainage Class	Code identifying the natural drainage condition of the soil and referring to the frequency and duration of periods when the soil is free of saturation. Example: Well Drained (W); Excessive (E); Moderately Well (MW); Poorly (P); Somewhat Excessively (SE); Somewhat Poorly (SP).
frostact	comp	Potential Frost Action	An interpretation rating of the susceptibility of the soil to frost heaving.
grpcode	interp	Interpretative Group Code	Code identifying the interpretive group or category for the interpretation specified. Examples of interpretive groups are septic tank absorption fields and shallow excavations.
grtgroup	taxclass	Great Group	Code for the taxonomic GREAT GROUP category.
gsflobeg	comp	Growing Season Flooding Begins	Month in which growing season (season for common field crops in the area) flooding begins in a normal year.
gsflodur	comp	Growing Season Flood Duration	The duration of flooding during the growing season (season for common field crops in the area).
gsfloend	comp	Growing Season Flooding Ends	Month in which growing season (season for common field crops in the area) flooding ends in a normal year.
gsflood	comp	Growing Season Flooding Frequency	Term describing the frequency of flooding during the growing season (season for the common field crops in the area). Frequent (FREQ); Occasional (OCCAS); Rare (RARE).

gypsumh	layer	Gypsum	Maximum value for the range in sulfates reported as gypsum (CaSO4) in the soil layer or horizon, expressed as a percent.
gypsuml	layer	Gypsum	Minimum value for the range in sulfates reported as gypsum (CaSO4) in the soil layer or horizon, expressed as a percent.
hydgrp	comp	Hydrologic Group	The hydrologic group for the soil. Example: A, A/D.
hydric	comp	Hydric Soil Rating	The symbol (Y/N) identifying hydric soils.
inch10h	layer	Weight Percent Greater than 10 in.	The maximum value for the range in percent by weight of the rock fragments greater than 10 inches in size in the soil layer or horizon.
inch10l	layer	Weight Percent Greater than 10 inches.	The minimum value for the range in percent by weight of the rock fragments greater than 10 inches in size in the soil layer or horizon.
inch3h	layer	Weight Percent 3 to 10 inches	The maximum value for the range in percent by weight of the rock fragments 3 to 10 inches in size in the soil layer or horizon.
inch3l	layer	Weight Percent Material 3 to 10 inches	The minimum value for the range in percent by weight of the rock fragments 3 to 10 inches in size in the soil layer or horizon.
irryld	compyld	Irrigated Crop Yield	The expected yield of the specific crop with irrigation in an average year under a high level of management.

kfact	layer	Soil Erodibility Factor	An erodibility factor which quantifies the susceptibility of soil particles to detachment and movement by water. This factor is used in the Universal Soil Loss Equation to calculate soil loss by water.
kffact	layer	Soil Erodibility Factor, rock fragments free	An erodibility factor which quantifies the susceptibility of soil particles to detachment and movement by water. This factor is used in the Universal Soil Loss Equation to calculate soil loss by water.
laydeph	layer	Layer Depth	The depth to the lower boundary of the soil layer or horizon, expressed in inches.
laydepl	layer	Layer Depth	Depth to the upper boundary of the soil layer or horizon, expressed in inches.
layerid	layer	Layer Identification Number	A convention to identify the original layers on the SOI-5 record. Example: layerid 11 for the first surface of a multisurface record, 12 for the second surface layer, 2 thru 9 for subsurface layers.
layernum	layer	Layer Number	The sequence number identifying layers in the soil profile. A layer number of 1 would indicate the layer is the surface layer.
llh	layer	Liquid Limit	The maximum value for the range in liquid limit of the soil layer of horizon, expressed as percent moisture by weight.
lll	layer	Liquid Limit	The minimum value for the range in liquid limit of the soil layer of horizon, expressed as percent moisture by weight.

minalogy	taxclass	Mineralogy	Code for the MINERALOGY class of the Family category of taxonomic classification.
mlra	map unit	Major Land Resource Area	The code used to identify the dominant Major Land Resource Area (MLRA) within which the soil map unit is mapped.
muacres	map unit	Map unit Acres	The acreage of the soil map unit in the State.
muid	comp compyld forest interp layer map unit plantcom rsprod windbrk wlhabit woodland woodmgt	Map unit Identification Symbol	A symbol created by concatenation of the two-character State FIPS code and a three-digit Arabic number. It uniquely identifies a map unit within a State. For example, the first map unit identified in Delaware is DE001. The muid is used as a key for linking information in the MUIR tables.
mukind	map unit	Map unit Kind	Code identifying the kind of map unit: Consociation (C); Association (A); Undifferentiated Group (U); Complex (X).
nirryld	compyld	Nonirrigated Crop Yield	The expected yield of the specific crop without supplemental irrigation. Defined as the yield expected in an average year under a high level of management.
no10h	layer	Percent Passing Sieve No. 10	The maximum value for the range in percent by weight of the soil material in a layer or horizon which is less than 3 inches in size and passes a No. 10 sieve.
no10l	layer	Percent Passing Sieve No. 10	The minimum value for the range in percent by weight of the soil material in a layer or horizon which is less than 3 inches in size and passes a No. 10 sieve.

no200h	layer	Percent Passing Sieve No. 200	The maximum value for the range in percent by weight of the soil material in a layer or horizon which is less than 3 inches in size and passes a No. 200 sieve.
no200l	layer	Percent Passing Sieve No. 200	The minimum value for the range in percent by weight of the soil material in a layer or horizon which is less than 3 inches in size and passes a No. 200 sieve.
no40h	layer	Percent Passing Sieve No. 40	The maximum value for the range in percent by weight of the soil material in a layer or horizon which is less than 3 inches in size and passes a No. 40 sieve.
no40l	layer	Percent Passing Sieve No. 40	The minimum value for the range in percent by weight of the soil material in a layer or horizon which is less than 3 inches in size and passes a No. 40 sieve.
no4h	layer	Percent Passing Sieve No. 4	The maximum value for the range in percent by weight of the soil material in a layer or horizon which is less than 3 inches in size and passes a No. 4 sieve.
no4l	layer	Percent Passing Sieve No. 4	The minimum value for the range in percent by weight of the soil material in a layer or horizon which is less than 3 inches in size and passes a No. 4 sieve.
omh	layer	Organic Matter	The maximum value for the range in organic matter content of the soil layer or horizon, expressed in percent by weight.
oml	layer	Organic Matter	The minimum value for the range in organic matter content of the soil layer or horizon, expressed in percent by weight.

order	taxclass	Order	Code for the taxonomic ORDER category of the record.
ordsym	woodmgt	Ordination Symbol	The ordination symbol is the class and subclass part of the woodland suitability group. The first element in ordination symbol is the productivity class. This is a number that denotes potential productivity in cubic meters of wood per hectare per year for an indicator tree (1m3/ha is equal to 14.3 ft.3/ac.). The second part of the ordination is the subclass,a capital letter symbol which indicates certain soil or physiographic characteristics that contribute to important hazards or limitations in management. Example: Excessive wetness (W); Clayey soils (C), etc.
otherfam	taxclass	Other Family	This field consists of OTHER FAMILY codes for soil depth class, slope class, consistence class, classes of coatings and classes of cracks of the Family category of taxonomic classification.
otherph	comp	Class-Determining Phase Criteria	Class-determining phase criteria, other than slope and texture, recorded on the SOI-6 and used to select appropriate interpretation and rating from the SOI-5 record.
pandeph	comp	Depth to Cemented Pan	Maximum value for the range in depth to the upper boundary of a cemented pan, expressed in inches.
pandepl	comp	Depth to Cemented Pan	Minimum value for the range in depth to the upper boundary of a cemented pan, expressed in inches.

panhard	comp	Cemented Pan Thickness	The degree of induration and thickness of the cemented pan. A pan is rated as "THICK" if it is more than 3 inches thick and continually indurated or more than 18 inches thick and discontinuous or fractured. Pans not meeting these criteria are rated THIN.
partsize	taxclass	Particle Size	Code for the PARTICLE-SIZE class of the Family category of taxonomic classification.
permh	layer	Permeability Rate	The maximum value for the range in permeability rate for the soil layer or horizon, expressed as inches/hour.
perml	layer	Permeability Rate	The minimum value for the range in permeability rate for the soil layer or horizon, expressed as inches/hour.
phh	layer	Soil Reaction (pH)	The maximum value for the range in soil reaction (pH) for the soil layer or horizon.
phl	layer	Soil Reaction (pH)	The minimum value for the range in soil reaction (pH) for the soil layer or horizon.
pih	layer	Plasticity Index	The maximum value for the range in plasticity index for the soil layer or horizon, expressed as percent of moisture by weight.
pil	layer	Plasticity Index	The minimum value for the range in plasticity index for the soil layer or horizon, expressed as percent of moisture by weight.
plantcov	forest	Plant Ground Cover	The percentage of the ground covered by the plant (forest understory).
plantpct	plantcom	Plant Production Percentage	The percentage of total site production attributed to the specified plant, expressed as percent of air-dry plant material weight.

plantsym	forest plantcom plantnm windbrk woodland	Plant Symbol	Symbol used to identify a specific plant.
pndbeg	comp	Ponding Begin	Month in which soil surface ponding begins in a normal year.
pnddeph	comp	Ponding Depth	The maximum value for the range in depth of surface water ponding on the soil.
pnddepl	comp	Ponding Depth	The minimum value for the range in depth of surface water ponding on the soil.
pnddur	comp	Ponding Duration	The duration of surface water ponding.
pndend	comp	Ponding End	Month in which surface water ponding ends in a normal year.
primfml	comp	Prime Farmland Classification	The prime farmland classification of a component.
prodfav	rsprod	Range Production Favorable	The estimated annual potential production of range forage for the soil in a year with favorable or above average growing conditions.
prodnorm	rsprod	Range Production Normal	The estimated annual potential production of range forage for the soil in a year with normal or average growing conditions.
produnfv	rsprod	Range Production Unfavorable	The estimated annual potential production of range forage for the soil in a year with unfavorable or below average growing conditions.
rating	interp	Soil Interpretative Rating	Rating of soil for specified use. Suitability ratings are good, fair, and poor. Limitation ratings are slight, moderate, and severe.

reaction	taxclass	Reaction	Code for the REACTION class of the Family category of taxonomic classification.
restct1	interp	First Restrictive Feature Code	The key phrase which indicates the feature causing the problem.
restct2	interp	Second Restrictive Feature Code	The key phrase which indicates the feature causing the problem.
restct3	interp	Third Restrictive Feature Code	The key phrase which indicates the feature causing the problem.
rockdeph	comp	Depth to Bedrock	The maximum value for the range in depth to bedrock, expressed in inches.
rockdepl	comp	Depth to Bedrock	The minimum value for the range in depth to bedrock, expressed in inches.
rockhard	comp	Bedrock Hardness	The degree of hardness of the underlying rock. Rated as: HARD - Excavation requires blasting or special equipment, or SOFT - Excavation can be made with trenching machines, backhoes, or small rippers.
rsid	rsprod	Range Site Identification	Code used to identify the SCS range site.
rsname	rsprod	Range Site Name	Name for the SCS range site.
salinh	layer	Salinity	The maximum value for the range in soil salinity of the soil layer or horizon measured as electrical conductivity of the soil in a saturated paste. Values are expressed in mmhos/cm.
salinl	layer	Salinity	The minimum value for the range in soil salinity of the soil layer or horizon measured as electrical conductivity of the soil in a saturated paste. Values are expressed in mmhos/cm.

sarh	layer	Sodium Absorption Ratio	The maximum value for the range in Sodium Absorption Ratio (SAR) for the soil layer or horizon.
sarl	layer	Sodium Absorption Ratio	The minimum value for the range in Sodium Absorption Ratio (SAR) for the soil layer or horizon.
sciname	plantnm	Scientific Plant Name	The scientific name of a plant.
sclirr	comp	Irrigated Capability Subclass	Irrigated Capability Subclass. Concatenation of capability class and subclass codes: Example: class 2 and subclass e are combined and entered as 2E.
sclnirr	comp	Nonirrigated Capability Subclass	Nonirrigated Capability Subclass. Concatenation of capability class and subclass codes. Example: class 2 and subclass e are combined and entered as 2E.
seqnum	comp compyld forest interp layer plantcom rsprod windbrk wlhabit woodland woodmgt woodland woodmgt	Sequence Number	A number identifying the sequence of components in a map unit. The first component of a multitaxa map unit has a seqnum of 1, the second component 2, and so on. STATSGO map units can have up to 21 components.
shrinksw	layer	Shrink-Swell Potential	An interpretation rating of the soil layer or horizon's behavior of changing volume (shrinking and swelling) upon wetting and drying.

sitind	woodland	Site Index	The height in feet of the larger trees at some given age, normally 100 years in the Western United States, and 50 years in the East. The pinyon-juniper forest type is an exception, where the site index is determined by basal area.
slopeh	comp	Soil Slope	The maximum value for the range of slope of a soil component within a map unit.
slopel	comp	Slope of Soil	The minimum value for the range of slope of a soil component within a map unit.
soiltemp	taxclass	Soil Temperature	Code for the SOIL TEMPERATURE class of the Family category of taxonomic classification.
subgroup	taxclass	Subgroup	Code for the taxonomic SUBGROUP category of the record.
subinith	comp	Initial Subsidence	Maximum value for the range in initial subsidence that can be expected when drained, expressed in inches (organic soils only).
subinitl	comp	Initial Subsidence	Minimum value for the range in initial subsidence that can be expected when drained, expressed in inches (organic soils only).
suborder	taxclass	Suborder	Code for the taxonomic SUBORDER category of the record.
subtoth	comp	Total Subsidence	Maximum value for the range in total subsidence that can be expected when drained, expressed in inches (organic soils only).
subtotl	comp	Total Subsidence	Minimum value for the range in total subsidence that can be expected when drained, expressed in inches (organic soils only).

suitcode	woodland	Woodland Tree Suitability	Code indicating if the tree is common to the site, Existing (E); or a tree which could be planted as a tree crop Potential (P). Trees which are existing and have a potential for planting are given a dual code (EP).
surftex	comp	Surface Soil Texture	Code for the USDA texture or term used in lieu of texture for the surface layer. Example: sandy loam (SL).
texture	layer	Soil Texture Class	Code for the USDA texture for the specified layer or horizon of the soil. Example: Sandy Loam (SL); Loam (L).
tfact	layer	T Factor	Soil loss tolerance factor. The maximum rate of soil erosion that will permit a high level of crop production.
unified	layer	Unified Soil Classification	The unified soil classification. An engineering classification of soils.
wdequip	woodmgt	Woodland Equipment	Woodland limitation rating for the use of equipment, year round or seasonal.
wderosn	woodmgt	Woodland Erosion	Woodland limitation rating identifying the probability that damage may occur as a result of site preparation and following cutting operations where soil is exposed.
wdplant	woodmgt	Woodland Plant Competition	Woodland limitation rating for the likelihood of the invasion or growth of undesirable species when openings are made in the canopy.
wdseed	woodmgt	Woodland Seeding Mortality	Woodland limitation rating identifying the probability of death of naturally occurring or planted tree seedlings as influenced by kinds of soil or topographic conditions.

wdwind	woodmgt	Woodland Windthro Hazard	Woodland limitation rating identifying the windthrow hazard. Windthrow is the likelihood of trees being uprooted by wind as a result of insufficient depth of the soil to give adequate root anchorage.
weg	layer	Wind Erodibility Group	The wind erodibility group (weg) assigned to the soil layer or horizon.
wlconif	wlhabit	Wildlife Habitat Element (coniferous trees)	Suitability of the soil to produce the wildlife habitat element coniferous trees.
wlgrain	wlhabit	Wildlife Habitat Element (grain)	Suitability of the soil to produce the wildlife habitat element grain.
wlgrass	wlhabit	Wildlife Habitat Element (grass)	Suitability of the soil to produce the wildlife habitat element grass.
wlhard	wlhabit	Wildlife Habitat Element (hardwood trees)	Suitability of the soil to produce the wildlife habitat element hardwood trees.
wlherb	wlhabit	Wildlife Habitat Element (herbaceous plants)	Suitability of the soil to produce the wildlife habitat element herbaceous plants.
wlopen	wlhabit	Wildlife Habitat Potential (open land)	Suitability of the soil to produce the habitat requirements for open land wildlife.
wlrange	wlhabit	Wildlife Habitat Potential (rangeland)	Suitability of the soil to produce the habitat requirements for rangeland wildlife.
wlshlwat	wlhabit	Wildlife Habitat Element (shallow water)	Suitability of the soil to produce the habitat element shallow water.
wlshrub	wlhabit	Wildlife Habitat Element (shrub)	Suitability of the soil to produce the wildlife habitat element shrubs.

wlwet	wlhabit	Wildlife Habitat Potential (wetland)	Suitability of the soil to produce the habitat requirements for wetland wildlife.
wlwetplt	wlhabit	Wildlife Habitat Element (wetland plant)	Suitability of the soil to produce the wildlife habitat element wetland plants.
wlwood	wlhabit	Wildlife Habitat Potential (woodland)	Suitability of the soil to produce the habitat requirements for woodland wildlife.
wndbrkht	windbrk	Windbreak Tree Height	Windbreak tree height in feet at age 20.
woodprod	woodland	Production Class	Production class information for a specific tree measured in cubic meters per hectare per year (1 m3/ha = 14.3 ft.3/ac.).
wtbeg	comp	Water Table Begins	Month in which seasonal water table occurs at the depth specified in a normal year.
wtdeph	comp	Water Table Depth	Maximum value for the range in depth to the seasonally high water table during the months specified.
wtdepl	comp	Water Table Depth	Minimum value for the range in depth to the seasonally high water table during the months specified.
wtend	comp	Water Table Ends	Month in which seasonal water table subsides below the depth specified in a normal year.
wtkind	comp	Water Table Kind	The type of water table: Apparent (APPAR); Artesian (ARTES); Perched (PERCH).
yldunits	yldunits	Yield Units	The units used to record the yield for the specified crop.

Data Dictionary Part II Definition of Soil Data Codes

domid	code	codename	codedesc
aashto	A-1	Group Classification A-1	Granular materials (35% or less passing No. 200), Stone Fragments, Gravel and Sand.
aashto	A-2	Group Classification A-2	Granular materials (35% or less passing No. 200), Silty or Clayey Gravel and Sand.
aashto	A-3	Group Classification A-3	Granular materials (35% or less passing No. 200), Fine Sand.
aashto	A-4	Group Classification A-4	Silt-Clay Materials (more than 35% passing No. 200), Silty Soils.
aashto	A-5	Group Classification A-5	Silt-Clay Materials (more than 35% passing No. 200), Silty Soils.
aashto	A-6	Group Classification A-6	Silt-Clay Materials (more than 35% passing No. 200), Clayey Soils.
aashto	A-7	Group Classification A-7	Silt-Clay Materials (more than 35% passing No. 200), Clayey Soils.
cl	1	Capability Class -I	Soils in Class I have few limitations that restrict their use.
cl	2	Capability Class - II	Soils in Class II have some limitations that reduce the choice of plants or require moderate conservation practices.

cl	3	Capability Class - III	Soils in Class III have severe limitations that reduce the choice of plants or require special conservation practices, or both.
cl	4	Capability Class - IV	Soils in Class IV have very severe limitations that restrict the choice of plants, require very careful management, or both.
cl	5	Capability Class - V	Soils in Class V have little or no erosion hazard but have other limitations impractical to remove that limit their use.
cl	6	Capability Class - VI	Soils in Class VI have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture, etc.
cl	7	Capability Class - VII	Soils in Class VII have very severe limitations that make them unsuited to cultivation and that restrict their use to grazing, etc.
cl	8	Capability Class - VIII	Soils (and landforms) in Class VIII have limitations that preclude their use for commercial plant production and restrict their use.

compkind	F	Family	
compkind	G	Taxon above family	
compkind	M	Miscellaneous area	
compkind	S	Series	
compkind	T	Taxadjunct	
compkind	V	Variant	
drainage	E	Excessively	Water is removed very rapidly. Internal free water occurrence is commonly very deep; annual duration is not specified.
drainage	SE	Somewhat Excessively	Water is removed from the the soil rapidly. Internal free water occurrence is commonly very deep; annual duration is not specified.
drainage	W	Well	Water is removed from the soil readily, but not rapidly.
drainage	MW	Moderately Well	Water is removed from the soil somewhat slowly during some periods of the year.
drainage	SP	Somewhat Poorly	Water is removed slowly enough that the soil is wet at shallow depth for significant periods during the growing season.
drainage	P	Poorly	Water is removed so slowly that the soil is wet at shallow depths periodically during the growing season, or remains wet for long periods.

drainage	VP	Very Poorly	Water is removed from the soil so slowly that free water remains at or very near the ground surface during much of the growing season.
fips	AK	02	
fips	AL	01	
fips	AR	05	
fips	AZ	04	
fips	CA	06	
fips	CO	08	
fips	CT	09	
fips	DE	10	
fips	FL	12	
fips	GA	13	
fips	HI	15	
fips	IA	19	
fips	ID	16	
fips	IL	17	
fips	IN	18	
fips	KS	20	
fips	KY	21	
fips	LA	22	
fips	MA	25	
fips	MD	24	
fips	ME	23	
fips	MI	26	
fips	MN	27	
fips	MNTC	63	
fips	MO	29	
fips	MS	28	
fips	MT	30	
fips	NC	37	
fips	ND	38	
fips	NE	31	
fips	NENTC	61	
fips	NH	33	
fips	NJ	34	
fips	NM	35	
fips	NV	32	
fips	NY	36	
fips	OH	39	
fips	OK	40	
fips	OR	41	
fips	PA	42	
fips	PR	72	
fips	RI	44	
fips	SC	45	
fips	SD	46	

fips	SNTC	62	
fips	TN	47	
fips	TX	48	
fips	UT	49	
fips	VA	51	
fips	VT	50	
fips	WA	53	
fips	WI	55	
fips	WNTC	64	
fips	WV	54	
fips	WY	56	
flodur	BRIEF	Flood Duration Class - Brief	Average duration of inundation per flood is 2 to 7 days.
flodur	LONG	Flood Duration Class - Long	Average duration of inundation per flood is 7 days to 1 month.
flodur	VBREF	Flood Duration Class - Very Brief	Average duration of inundation per flood is less than 2 days.
flodur	VLONG	Flood Duration Class - Very Long	Average duration of inundation per flood is more than 1 month.
flood	FREQ	Frequency Class - Frequent	Flooding is likely to occur often, more than 50 percent chance of flooding in any year (at least 50 times in 100 years).
flood	NONE	Frequency Class - NONE	Flooding is not likely to occur.
flood	OCCAS	Frequency Class - Occasional	Flooding is expected infrequently, 5 to 50 percent chance of flooding in any year (5 to 50 times in 100 years).
flood	RARE	Frequency Class - Rare	Flooding unlikely but possible, 0 to 5 percent chance of flooding in any year (0 to 5 times in 100 years).

grpcode		
grpcode	1	Septic Tank Absorption Fields
grpcode	10	Local Streets and Roads
grpcode	11	Lawns, Landscaping, and Golf Fairways
grpcode	12	Roadfill
grpcode	13	Sand
grpcode	14	Gravel
grpcode	15	Topsoil
grpcode	16	Pond Reservoir Area
grpcode	17	Embankments, Dikes and Levees
grpcode	18	Excavated Ponds--Aquifier Fed
grpcode	19	Drainage
grpcode	2	Sewage Lagoons
grpcode	20	Irrigation
grpcode	21	Terraces and Diversions
grpcode	22	Grassed Waterways
grpcode	23	Camp Areas
grpcode	24	Picnic Areas
grpcode	25	Playgrounds
grpcode	26	Paths and Trails
grpcode	3	Sanitary Landfill (Trench)
grpcode	4	Sanitary Landfill (Area)

grpcode	5	Daily Cover for Landfill
grpcode	6	Shallow Excavations
grpcode	7	Dwellings without Basements
grpcode	8	Dwellings with Basements
grpcode	9	Small Commercial Buildings

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grtgroup  AAQAL   ALBAQUALFS
grtgroup  AAQDU   DURAQUALFS
grtgroup  AAQFR   FRAGIAQUALFS
grtgroup  AAQGL   GLOSSAQUALFS
grtgroup  AAQKA   KANDIAQUALFS
grtgroup  AAQNA   NATRAQUALFS
grtgroup  AAQOC   OCHRAQUALFS
grtgroup  AAQPN   PLINTHAQUALFS
grtgroup  AAQTR   TROPAQUALFS
grtgroup  AAQUM   UMBRAQUALFS
grtgroup  ABOCR   CRYOBORALFS
grtgroup  ABOEU   EUTROBORALFS
grtgroup  ABOFR   FRAGIBORALFS
grtgroup  ABOGL   GLOSSOBORALFS
grtgroup  ABONA   NATRIBORALFS
grtgroup  ABOPA   PALEBORALFS
grtgroup  AUDAG   AGRUDALFS
grtgroup  AUDFE   FERRUDALFS
grtgroup  AUDFR   FRAGIUDALFS
grtgroup  AUDFS   FRAGLOSSUDALFS
grtgroup  AUDGL   GLOSSUDALFS
grtgroup  AUDHA   HAPLUDALFS
grtgroup  AUDKA   KANDIUDALFS
grtgroup  AUDKH   KANHAPLUDALFS
grtgroup  AUDNA   NATRUDALFS
grtgroup  AUDPA   PALEUDALFS
grtgroup  AUDRH   RHODUDALFS
grtgroup  AUDTR   TROPUDALFS
grtgroup  AUSDU   DURUSTALFS
grtgroup  AUSHA   HAPLUSTALFS
grtgroup  AUSKA   KANDIUSTALFS
grtgroup  AUSKH   KANHAPLUSTALFS
grtgroup  AUSNA   NATRUSTALFS
grtgroup  AUSPA   PALEUSTALFS
grtgroup  AUSPN   PLINTHUSTALFS
grtgroup  AUSRH   RHODUSTALFS
grtgroup  AXEDU   DURIXERALFS
grtgroup  AXEFR   FRAGIXERALFS
grtgroup  AXEHA   HAPLOXERALFS
grtgroup  AXENA   NATRIXERALFS
grtgroup  AXEPA   PALEXERALFS
grtgroup  AXEPN   PLINTHOXERALFS
grtgroup  AXERH   RHODOXERALFS
grtgroup  CAQCR   CRYAQUANDS
grtgroup  CAQDU   DURAQUANDS
grtgroup  CAQHA   HAPLAQUANDS
grtgroup  CAQME   MELANAQUANDS
grtgroup  CAQPK   PLACAQUANDS
grtgroup  CAQVI   VITRAQUANDS
grtgroup  CCRFU   FULVICRYANDS
grtgroup  CCRGE   GELICRYANDS
grtgroup  CCRHA   HAPLOCRYANDS
grtgroup  CCRHY   HYDROCRYANDS
grtgroup  CCRME   MELANOCRYANDS
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grtgroup  CCRVI   VITRICRYANDS
grtgroup  CTOVI   VITRITORRANDS
grtgroup  CUDDU   DURUDANDS
grtgroup  CUDFU   FULVUDANDS
grtgroup  CUDHA   HAPLUDANDS
grtgroup  CUDHY   HYDRUDANDS
grtgroup  CUDME   MELANUDANDS
grtgroup  CUDPK   PLACUDANDS
grtgroup  CUSDU   DURUSTANDS
grtgroup  CUSHA   HAPLUSTANDS
grtgroup  CVIUD   UDIVITRANDS
grtgroup  CVIUS   USTIVITRANDS
grtgroup  CXEHA   HAPLOXERANDS
grtgroup  CXEME   MELANOXERANDS
grtgroup  CXEVI   VITRIXERANDS
grtgroup  DARDU   DURARGIDS
grtgroup  DARHA   HAPLARGIDS
grtgroup  DARND   NADURARGIDS
grtgroup  DARNT   NATRARGIDS
grtgroup  DARPA   PALEARGIDS
grtgroup  DORCL   CALCIORTHIDS
grtgroup  DORCM   CAMBORTHIDS
grtgroup  DORDU   DURORTHIDS
grtgroup  DORGY   GYPSIORTHIDS
grtgroup  DORPA   PALEORTHIDS
grtgroup  DORSA   SALORTHIDS
grtgroup  EAQCR   CRYAQUENTS
grtgroup  EAQFL   FLUVAQUENTS
grtgroup  EAQHA   HAPLAQUENTS
grtgroup  EAQHY   HYDRAQUENTS
grtgroup  EAQPS   PSAMMAQUENTS
grtgroup  EAQSU   SULFAQUENTS
grtgroup  EAQTR   TROPAQUENTS
grtgroup  EARTO   TORRIARENTS
grtgroup  EARUD   UDARENTS
grtgroup  EARUS   USTARENTS
grtgroup  EARXE   XERARENTS
grtgroup  EFLCR   CRYOFLUVENTS
grtgroup  EFLTO   TORRIFLUVENTS
grtgroup  EFLTR   TROPOFLUVENTS
grtgroup  EFLUD   UDIFLUVENTS
grtgroup  EFLUS   USTIFLUVENTS
grtgroup  EFLXE   XEROFLUVENTS
grtgroup  EORCR   CRYORTHENTS
grtgroup  EORTO   TORRIORTHENTS
grtgroup  EORTR   TROPORTHENTS
grtgroup  EORUD   UDORTHENTS
grtgroup  EORUS   USTORTHENTS
grtgroup  EORXE   XERORTHENTS
grtgroup  EPSCR   CRYOPSAMMENTS
grtgroup  EPSQU   QUARTZIPSAMMENTS
grtgroup  EPSTO   TORRIPSAMMENTS
grtgroup  EPSTR   TROPOPSAMMENTS
grtgroup  EPSUD   UDIPSAMMENTS
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grtgroup  EPSUS   USTIPSAMMENTS
grtgroup  EPSXE   XEROPSAMMENTS
grtgroup  HFIBO   BOROFIBRISTS
grtgroup  HFICR   CRYOFIBRISTS
grtgroup  HFILU   LUVIFIBRISTS
grtgroup  HFIME   MEDIFIBRISTS
grtgroup  HFISP   SPHAGNOFIBRISTS
grtgroup  HFITR   TROPOFIBRISTS
grtgroup  HFOBO   BOROFOLISTS
grtgroup  HFOCR   CRYOFOLISTS
grtgroup  HFOTR   TROPOFOLISTS
grtgroup  HHEBO   BOROHEMISTS
grtgroup  HHECR   CRYOHEMISTS
grtgroup  HHELU   LUVIHEMISTS
grtgroup  HHEME   MEDIHEMISTS
grtgroup  HHESI   SULFIHEMISTS
grtgroup  HHESO   SULFOHEMISTS
grtgroup  HHETR   TROPOHEMISTS
grtgroup  HSABO   BOROSAPRISTS
grtgroup  HSACR   CRYOSAPRISTS
grtgroup  HSAME   MEDISAPRISTS
grtgroup  HSATR   TROPOSAPRISTS
grtgroup  IANCR   CRYANDEPTS
grtgroup  IANDU   DURANDEPTS
grtgroup  IANDY   DYSTRANDEPTS
grtgroup  IANEU   EUTRANDEPTS
grtgroup  IANHY   HYDRANDEPTS
grtgroup  IANPK   PLACANDEPTS
grtgroup  IANVI   VITRANDEPTS
grtgroup  IAQAN   ANDAQUEPTS
grtgroup  IAQCR   CRYAQUEPTS
grtgroup  IAQFR   FRAGIAQUEPTS
grtgroup  IAQHL   HALAQUEPTS
grtgroup  IAQHP   HAPLAQUEPTS
grtgroup  IAQHU   HUMAQUEPTS
grtgroup  IAQPK   PLACAQUEPTS
grtgroup  IAQPN   PLINTHAQUEPTS
grtgroup  IAQSU   SULFAQUEPTS
grtgroup  IAQTR   TROPAQUEPTS
grtgroup  IOCCR   CRYOCHREPTS
grtgroup  IOCDU   DUROCHREPTS
grtgroup  IOCDY   DYSTROCHREPTS
grtgroup  IOCEU   EUTROCHREPTS
grtgroup  IOCFR   FRAGIOCHREPTS
grtgroup  IOCUS   USTOCHREPTS
grtgroup  IOCXE   XEROCHREPTS
grtgroup  IPLPL   PLAGGEPTS
grtgroup  ITRDY   DYSTROPEPTS
grtgroup  ITREU   EUTROPEPTS
grtgroup  ITRHU   HUMITROPEPTS
grtgroup  ITRSO   SOMBRITROPEPTS
grtgroup  ITRUS   USTROPEPTS
grtgroup  IUMCR   CRYUMBREPTS
grtgroup  IUMFR   FRAGIUMBREPTS
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grtgroup  IUMHA   HAPLUMBREPTS
grtgroup  IUMXE   XERUMBREPTS
grtgroup  MALAR   ARGIALBOLLS
grtgroup  MALNA   NATRALBOLLS
grtgroup  MAQAR   ARGIAQUOLLS
grtgroup  MAQCA   CALCIAQUOLLS
grtgroup  MAQCR   CRYAQUOLLS
grtgroup  MAQDU   DURAQUOLLS
grtgroup  MAQHA   HAPLAQUOLLS
grtgroup  MAQNA   NATRAQUOLLS
grtgroup  MBOAR   ARGIBOROLLS
grtgroup  MBOCA   CALCIBOROLLS
grtgroup  MBOCR   CRYOBOROLLS
grtgroup  MBOHA   HAPLOBOROLLS
grtgroup  MBONA   NATRIBOROLLS
grtgroup  MBOPA   PALEBOROLLS
grtgroup  MBOVE   VERMIBOROLLS
grtgroup  MRERE   RENDOLLS
grtgroup  MUDAR   ARGIUDOLLS
grtgroup  MUDHA   HAPLUDOLLS
grtgroup  MUDPA   PALEUDOLLS
grtgroup  MUDVE   VERMUDOLLS
grtgroup  MUSAR   ARGIUSTOLLS
grtgroup  MUSCA   CALCIUSTOLLS
grtgroup  MUSDU   DURUSTOLLS
grtgroup  MUSHA   HAPLUSTOLLS
grtgroup  MUSNA   NATRUSTOLLS
grtgroup  MUSPA   PALEUSTOLLS
grtgroup  MUSVE   VERMUSTOLLS
grtgroup  MXEAR   ARGIXEROLLS
grtgroup  MXECA   CALCIXEROLLS
grtgroup  MXEDU   DURIXEROLLS
grtgroup  MXEHA   HAPLOXEROLLS
grtgroup  MXENA   NATRIXEROLLS
grtgroup  MXEPA   PALEXEROLLS
grtgroup  OAQGI   GIBBSIAQUOX
grtgroup  OAQOC   OCHRAQUOX
grtgroup  OAQPN   PLINTHAQUOX
grtgroup  OAQUM   UMBRAQUOX
grtgroup  OHUAC   ACROHUMOX
grtgroup  OHUGI   GIBBSIHUMOX
grtgroup  OHUHA   HAPLOHUMOX
grtgroup  OHUSO   SOMBRIHUMOX
grtgroup  OORAC   ACRORTHOX
grtgroup  OOREU   EUTRORTHOX
grtgroup  OORGI   GIBBSIORTHOX
grtgroup  OORHA   HAPLORTHOX
grtgroup  OORSO   SOMBRIORTHOX
grtgroup  OORUM   UMBRIORTHOX
grtgroup  OPRHA   HAPLOPEROX
grtgroup  OPRKA   KANDIPEROX
grtgroup  OTOAC   ACROTORROX
grtgroup  OTOTO   TORROX
grtgroup  OUDHA   HAPLUDOX
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grtgroup  OUDKA   KANDIUDOX
grtgroup  OUSAC   ACRUSTOX
grtgroup  OUSEU   EUTRUSTOX
grtgroup  OUSHA   HAPLUSTOX
grtgroup  OUSSO   SOMBRIUSTOX
grtgroup  SAQCR   CRYAQUODS
grtgroup  SAQDU   DURAQUODS
grtgroup  SAQFR   FRAGIAQUODS
grtgroup  SAQHA   HAPLAQUODS
grtgroup  SAQPK   PLACAQUODS
grtgroup  SAQSI   SIDERAQUODS
grtgroup  SAQTR   TROPAQUODS
grtgroup  SFEFE   FERRODS
grtgroup  SHUCR   CRYOHUMODS
grtgroup  SHUFR   FRAGIHUMODS
grtgroup  SHUHA   HAPLOHUMODS
grtgroup  SHUPK   PLACOHUMODS
grtgroup  SHUTR   TROPOHUMODS
grtgroup  SORCR   CRYORTHODS
grtgroup  SORFR   FRAGIORTHODS
grtgroup  SORHA   HAPLORTHODS
grtgroup  SORPK   PLACORTHODS
grtgroup  SORTR   TROPORTHODS
grtgroup  UAQAL   ALBAQUULTS
grtgroup  UAQFR   FRAGIAQUULTS
grtgroup  UAQKA   KANDIAQUULTS
grtgroup  UAQKH   KANHAPLAQUULTS
grtgroup  UAQOC   OCHRAQUULTS
grtgroup  UAQPA   PALEAQUULTS
grtgroup  UAQPN   PLINTHAQUULTS
grtgroup  UAQTR   TROPAQUULTS
grtgroup  UAQUM   UMBRAQUULTS
grtgroup  UHUHA   HAPLOHUMULTS
grtgroup  UHUKA   KANDIHUMULTS
grtgroup  UHUKH   KANHAPLOHUMULTS
grtgroup  UHUPA   PALEHUMULTS
grtgroup  UHUPN   PLINTHOHUMULTS
grtgroup  UHUSO   SOMBRIHUMULTS
grtgroup  UHUTR   TROPOHUMULTS
grtgroup  UUDFR   FRAGIUDULTS
grtgroup  UUDHA   HAPLUDULTS
grtgroup  UUDKA   KANDIUDULTS
grtgroup  UUDKH   KANHAPLUDULTS
grtgroup  UUDPA   PALEUDULTS
grtgroup  UUDPN   PLINTHUDULTS
grtgroup  UUDRH   RHODUDULTS
grtgroup  UUDTR   TROPUDULTS
grtgroup  UUSHA   HAPLUSTULTS
grtgroup  UUSKA   KANDIUSTULTS
grtgroup  UUSKH   KANHAPLUSTULTS
grtgroup  UUSPA   PALEUSTULTS
grtgroup  UUSPN   PLINTHUSTULTS
grtgroup  UUSRH   RHODUSTULTS
grtgroup  UXEHA   HAPLOXERULTS
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grtgroup	UXEPA	PALEXERULTS	
grtgroup	VTOTO	TORRERTS	
grtgroup	VUDCH	CHROMUDERTS	
grtgroup	VUDPE	PELLUDERTS	
grtgroup	VUSCH	CHROMUSTERTS	
grtgroup	VUSPE	PELLUSTERTS	
grtgroup	VXECH	CHROMOXERERTS	
grtgroup	VXEPE	PELLOXERERTS	
hydgrp	A	Hydrology Class - A	High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.
hydgrp	A/D	Hydrology Class - A/D	Drained/undrained hydrology class of soils that can be drained and are classified.
hydgrp	B	Hydrology Class - B	Moderate infiltration rates. Deep and moderately deep, moderately well and well-drained soils with moderately coarse textures.
hydgrp	B/D	Hydrology Class - B/D	Drained/undrained hydrology class of soils that can be drained and are classified.
hydgrp	C	Hydrology Class - C	Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

hydgrp	C/D	Hydrology Class - C/D	Drained/undrained hydrology class of soils that can be drained and classified.
hydgrp	D	Hydrology Class - D	Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.
hydric	N	NO	Soil does not meet the requirements for a hydric soil.
hydric	Y	YES	Soil meets the requirements for a hydric soil.
intensty	1	First Order Soil Survey	Scale - > 1:15840, Minimum Delineation - 1 ha or less, Consociations and some Complexes.
minalogy	01	UNCLASSIFIED	
minalogy	02	NOT USED	
minalogy	04	CALCAREOUS	
minalogy	05	CARBONATIC	
minalogy	07	CLASTIC	
minalogy	08	COPROGENOUS	
minalogy	09	CHLORITIC	
minalogy	10	DIATOMACEOUS	
minalogy	12	FERRIHUMIC	
minalogy	14	FERRITIC	
minalogy	18	GIBBSITIC	
minalogy	20	GLAUCONITIC	
minalogy	22	GYPSIC	
minalogy	24	HALLOYSITIC	
minalogy	26	ILLITIC	
minalogy	27	ILLITIC (CALCAREOUS)	
minalogy	28	KAOLINITIC	
minalogy	30	MARLY	
minalogy	32	MICACEOUS	
minalogy	34	MIXED	
minalogy	35	MIXED (CALCAREOUS)	
minalogy	37	MONTMORILLONITIC	
minalogy	38	MONTMORILLONITIC (CALCAREOUS)	
minalogy	40	OXIDIC	

minalogy	42	SEPIOLITIC	
minalogy	44	SERPENTINITIC	
minalogy	46	SILICEOUS	
minalogy	50	VERMICULITIC	
mlra	1	NORTHERN PACIFIC COAST RANGE, etc.	Northern Pacific Coast Range, Foothills, and Valleys
mlra	10	UPPER SNAKE RIVER LAVA PLAINS AND HILLS	
mlra	100	ERIE FRUIT AND TRUCK AREA	
mlra	101	ONTARIO PLAIN AND FINGER LAKES AREA	
mlra	102A	ROLLING TILL PRAIRIE	
mlra	102B	LOESS UPLAND AND TILL PLAINS	
mlra	103	CENTRAL IOWA AND MINNESOTA TILL PRAIRIES	
mlra	104	EASTERN IOWA AND MINNESOTA TILL PRAIRIES	
mlra	105	NORTHERN MISSISSIPPI VALLEY LOESS HILLS	
mlra	106	NEBRASKA AND KANSAS LOESS-DRIFT HILLS	
mlra	107	IOWA AND MISSOURI DEEP LOESS HILLS	
mlra	108	ILLINOIS AND IOWA DEEP LOESS AND DRIFT	
mlra	109	IOWA AND MISSOURI HEAVY TILL PLAIN	
mlra	11	SNAKE RIVER PLAINS	
mlra	110	NORTHERN ILLINOIS AND INDIANA, etc.	Northern Illinois and Indiana Heavy Till Plain

mlra	111	INDIANA AND OHIO TILL PLAIN	
mlra	112	CHEROKEE PRAIRIES	
mlra	113	CENTRAL CLAYPAN AREAS	
mlra	114	SOUTHERN ILLINOIS AND INDIANA, etc.	Southern Illinois and Indiana Thin Loess and Till Plain
mlra	115	CENTRAL MISSISSIPPI VALLEY WOODED SLOPES	
mlra	116A	OZARK HIGHLAND	
mlra	116B	OZARK BORDER	
mlra	117	BOSTON MOUNTAINS	
mlra	118	ARKANSAS VALLEY AND RIDGES	
mlra	119	OUACHITA MOUNTAINS	
mlra	12	LOST RIVER VALLEYS AND MOUNTAINS	
mlra	120	KENTUCKY AND INDIANA SANDSTONE, etc.	Kentucky and Indiana Sandstone and Shale Hills and Valleys
mlra	121	KENTUCKY BLUEGRASS	
mlra	122	HIGHLAND RIM AND PENNYROYAL	
mlra	123	NASHVILLE BASIN	
mlra	124	WESTERN ALLEGHENY PLATEAU	
mlra	125	CUMBERLAND PLATEAU AND MOUNTAINS	
mlra	126	CENTRAL ALLEGHENY PLATEAU	

mlra	127	EASTERN ALLEGHENY PLATEAU AND MOUNTAINS	
mlra	128	SOUTHERN APPALACHIAN RIDGES AND VALLEYS	
mlra	129	SAND MOUNTAIN	
mlra	13	EASTERN IDAHO PLATEAUS	
mlra	130	BLUE RIDGE	
mlra	131	SOUTHERN MISSISSIPPI VALLEY ALLUVIUM	
mlra	133A	SOUTHERN COASTAL PLAIN	
mlra	133B	WESTERN COASTAL PLAIN	
mlra	134	SOUTHERN MISSISSIPPI VALLEY SILTY UPLAND	
mlra	135	ALABAMA, MISSISSIPPI, AND ARKANSAS, etc.	Alabama, Mississippi, and Arkansas Blackland Prairies
mlra	136	SOUTHERN PIEDMONT	
mlra	137	CAROLINA AND GEORGIA SAND HILLS	
mlra	138	NORTH-CENTRAL FLORIDA RIDGE	
mlra	139	EASTERN OHIO TILL PLAIN	
mlra	14	CENTRAL CALIFORNIA COASTAL VALLEYS	
mlra	140	GLACIATED ALLEGHENY PLATEAU, etc.	Glaciated Allegheny Plateau and Catskill Mountains
mlra	141	TUGHILL PLATEAU	

mlra	142	ST. LAWRENCE-CHAMPLAIN PLAIN	
mlra	143	NORTHEASTERN MOUNTAINS	
mlra	144A	NEW ENGLAND AND EASTERN NEW YORK, etc.	New England and Eastern New York Upland, Southern Part
mlra	144B	NEW ENGLAND AND EASTERN NEW YORK, etc.	New England and Eastern New York Upland, Northern Part
mlra	145	CONNECTICUT VALLEY	
mlra	146	AROOSTOCK AREA	
mlra	147	NORTHERN APPALACHAIN RIDGES AND VALLEYS	
mlra	148	NORTHERN PIEDMONT	
mlra	149A	NORTHERN COASTAL PLAIN	
mlra	149B	LONG ISLAND-CAPE COD COASTAL LOWLAND	
mlra	15	CENTRAL CALIFORNIA COAST RANGE	
mlra	150A	GULF COAST PRAIRIES	
mlra	150B	GULF COAST SALINE PRAIRIES	
mlra	151	GULF COAST MARSH	
mlra	152A	EASTERN GULF COAST FLATWOODS	
mlra	152B	WESTERN GULF COAST FLATWOODS	
mlra	153A	ATLANTIC COAST FLATWOODS	
mlra	153B	TIDEWATER AREA	

mlra	153C	MID-ATLANTIC COASTAL PLAIN	
mlra	154	SOUTH-CENTRAL FLORIDA RIDGE	
mlra	155	SOUTHERN FLORIDA FLATWOODS	
mlra	156A	FLORIDA EVERGLADES AND ASSOCIATED AREAS	
mlra	156B	SOUTHERN FLORIDA LOWLANDS	
mlra	157	ARID AND SEMIARID LOW MOUNTAIN SLOPES	
mlra	158	SEMIARID AND SUBHUMID LOW MOUNTAIN, etc.	Semiarid and Subhumid Low Mountain Slopes
mlra	159	HUMID AND VERY HUMID LOW, etc.	Humid and Very Humid Low and Intermediate Mountain Slopes
mlra	16	CALIFORNIA DELTA	
mlra	160	SUBHUMID AND HUMID INTERMEDIATE, etc.	Subhumid and Humid Intermediate and High Mountain Slopes
mlra	161	LAVA FLOWS AND ROCK OUTCROPS	
mlra	162	VERY HUMID AREAS, etc.	Very Humid Areas on East and West Maui and Kohala Mountains, and Mount Waialeale
mlra	163	ALLUVIAL FANS AND COASTAL PLAINS	
mlra	164	ROUGH MOUNTAINOUS LAND	
mlra	165	SUBHUMID INTERMEDIATE MOUNTAIN SLOPES	
mlra	166	VERY STONY LAND AND ROCK LAND	

mlra	167	HUMID LOW AND INTERMEDIATE, etc.	Humid Low and Intermediate Mountain Slopes
mlra	168	SOUTHEASTERN ALASKA	
mlra	169	SOUTH-CENTRAL ALASKA MOUNTAINS	
mlra	17	SACRAMENTO AND SAN JOAQUIN VALLEYS	
mlra	170	COOK INLET-SUSITNA LOWLAND	
mlra	171	ALASKA PENINSULA, etc.	Alaska Peninsula and Southwestern Islands
mlra	172	COOPER RIVER PLATEAU	
mlra	173	ALASKA RANGE	
mlra	174	INTERIOR ALASKA LOWLANDS	
mlra	175	KUSKOKWIM HIGHLANDS	
mlra	176	INTERIOR ALASKA HIGHLANDS	
mlra	177	NORTON SOUND HIGHLANDS	
mlra	178	WESTERN ALASKA COASTAL PLAINS AND DELTAS	
mlra	179	BERING SEA ISLANDS	
mlra	18	SIERRA NEVADA FOOTHILLS	
mlra	180	BROOKS RANGE	
mlra	181	ARCTIC FOOTHILLS	
mlra	182	ARCTIC COSTAL PLAIN	
mlra	19	SOUTHERN CALIFORNIA COASTAL PLAIN	
mlra	190	PONAPE	Pacific Basin Area

mlra	191	KOSRAE	Pacific Basin Area
mlra	192	MARSHALL ISLANDS	Pacific Basin Area
mlra	193	TRUK	Pacific Basin Area
mlra	194	YAP	Pacific Basin Area
mlra	195	PALAU	Pacific Basin Area
mlra	196	TUTUILA, AUNU'U	Pacific Basin Area
mlra	197	TAU	Pacific Basin Area
mlra	198	OFU, OLOSEGA	Pacific Basin Area
mlra	199	NORTHERN GUAM	Pacific Basin Area
mlra	2	WILLAMETTE AND PUGET SOUND VALLEYS	
mlra	20	SOUTHERN CALIFORNIA MOUNTAINS	
mlra	200	SOUTHERN GUAM	Pacific Basin Area
mlra	201	SAIPAN	Pacific Basin Area
mlra	202	AGUIJAN, TINIAN	Pacific Basin Area
mlra	203	ROTA	Pacific Basin Area
mlra	21	KLAMATH AND SHASTA VALLEYS AND BASINS	
mlra	22	SIERRA NEVADA RANGE	
mlra	23	MALHEUR HIGH PLATEAU	
mlra	24	HUMBOLDT AREA	
mlra	25	OWYHEE HIGH PLATEAU	
mlra	26	CARSON BASIN AND MOUNTAINS	
mlra	27	FALLON-LOVELOCK AREA	
mlra	270	HUMID MOUNTAINS AND VALLEYS	
mlra	271	SEMIARID MOUNTAINS AND VALLEYS	

mlra	272	HUMID COASTAL PLAINS	
mlra	273	SEMIARID COASTAL PLAINS	
mlra	28A	GREAT SALT LAKE AREA	
mlra	28B	CENTRAL NEVADA BASIN AND RANGE	
mlra	29	SOUTHERN NEVADA BASIN AND RANGE	
mlra	3	OLYMPIC AND CASCADE MOUNTAINS	
mlra	30	SONORAN BASIN AND RANGE	
mlra	31	IMPERIAL VALLEY	
mlra	32	NORTHERN INTERMOUNTAIN DESERTIC BASINS	
mlra	33	SEMIARID ROCKY MOUNTAINS	
mlra	34	CENTRAL DESERTIC BASINS, etc.	Central Desertic Basins, Mountains, and Plateaus.
mlra	35	COLORADO AND GREEN RIVER PLATEAUS	
mlra	36	NEW MEXICO AND ARIZONA, etc.	New Mexico and Arizona Plateaus and Mesas.
mlra	37	SAN JUAN RIVER VALLEY MESAS AND PLATEAUS	
mlra	39	ARIZONA AND NEW MEXICO MOUNTAINS	
mlra	4	CALIFORNIA COASTAL REDWOOD BELT	
mlra	40	CENTRAL ARIZONA BASIN AND RANGE	
mlra	41	SOUTHEASTERN ARIZONA BASIN AND RANGE	

mlra	42	SOUTHERN DESERTIC BASINS, PLAINS, etc.	Southern Desertic Basins, Plains, and Mountains.
mlra	43	NORTHERN ROCKY MOUNTAINS	
mlra	44	NORTHERN ROCKY MOUNTAIN VALLEYS	
mlra	46	NORTHERN ROCKY MOUNTAIN FOOTHILLS	
mlra	47	WASATCH AND UINTA MOUNTAINS	
mlra	48A	SOUTHERN ROCKY MOUNTAINS	
mlra	48B	SOUTHERN ROCKY MOUNTAIN PARKS	
mlra	49	SOUTHERN ROCKY MOUNTAIN FOOTHILLS	
mlra	5	SISKIYOU-TRINITY AREA	
mlra	51	HIGH INTERMOUNTAIN VALLEYS	
mlra	52	BROWN GLACIATED PLAIN	
mlra	53A	NORTHERN DARK BROWN GLACIATED PLAINS	
mlra	53B	CENTRAL DARK BROWN GLACIATED PLAINS	
mlra	53C	SOUTHERN DARK BROWN GLACIATED PLAINS	
mlra	54	ROLLING SOFT SHALE PLAIN	
mlra	55A	NORTHERN BLACK GLACIATED PLAINS	
mlra	55B	CENTRAL BLACK GLACIATED PLAINS	
mlra	55C	SOUTHERN BLACK GLACIATED PLAINS	

mlra	56	RED RIVER VALLEY OF THE NORTH	
mlra	57	NORTHERN MINNESOTA GRAY DRIFT	
mlra	58A	NORTHERN ROLLING HIGH PLAINS, etc.	Northern Rolling High Plains, Northern part
mlra	58B	NORTHERN ROLLING HIGH PLAINS, etc.	Northern Rolling High Plains, Southern part
mlra	58C	NORTHERN ROLLING HIGH PLAINS, etc.	Northern Rolling High Plains, Northeastern part
mlra	58D	NORTHERN ROLLING HIGH PLAINS, etc.	Northern Rolling High Plains, Eastern part
mlra	6	CASCADE MOUNTAINS, EASTERN SLOPE	
mlra	60A	PIERRE SHALE PLAINS AND BADLANDS	
mlra	60B	PIERRE SHALE PLAINS, NORTHERN PART	
mlra	61	BLACK HILLS FOOT SLOPES	
mlra	62	BLACK HILLS	
mlra	63A	NORTHERN ROLLING PIERRE SHALE PLAINS	
mlra	63B	SOUTHERN ROLLING PIERRE SHALE PLAINS	
mlra	64	MIXED SANDY AND SILTY TABLELAND	
mlra	65	NEBRASKA SAND HILLS	
mlra	66	DAKOTA-NEBRASKA ERODED TABLELAND	
mlra	67	CENTRAL HIGH PLAINS	

mlra	69	UPPER ARKANSAS VALLEY ROLLING PLAINS
mlra	7	COLUMBIA BASIN
mlra	70	PECOS-CANADIAN PLAINS AND VALLEYS
mlra	71	CENTRAL NEBRASKA LOESS HILLS
mlra	72	CENTRAL HIGH TABLELAND
mlra	73	ROLLING PLAINS AND BREAKS
mlra	74	CENTRAL KANSAS SANDSTONE HILLS
mlra	75	CENTRAL LOESS PLAINS
mlra	76	BLUESTEM HILLS
mlra	77	SOUTHERN HIGH PLAINS
mlra	78	CENTRAL ROLLING RED PLAINS
mlra	79	GREAT BEND SAND PLAINS
mlra	8	COLUMBIA PLATEAU
mlra	80A	CENTRAL ROLLING RED PRAIRIES
mlra	80B	TEXAS NORTH-CENTRAL PRAIRIES
mlra	81A	EDWARDS PLATEAU, WESTERN PART
mlra	81B	EDWARDS PLATEAU, CENTRAL PART
mlra	81C	EDWARDS PLATEAU, EASTERN PART
mlra	82	TEXAS CENTRAL BASIN
mlra	83A	NORTHERN RIO GRANDE PLAIN

mlra	83B	WESTERN RIO GRANDE PLAIN	
mlra	83C	CENTRAL RIO GRANDE PLAIN	
mlra	83D	LOWER RIO GRANDE PLAIN	
mlra	84A	CROSS TIMBERS	
mlra	84B	WEST CROSS TIMBERS	
mlra	84C	EAST CROSS TIMBERS	
mlra	85	GRAND PRAIRIE	
mlra	86A	TEXAS BLACKLAND PRAIRIE, NORTHERN PART	
mlra	86B	TEXAS BLACKLAND PRAIRIE, SOUTHERN PART	
mlra	87A	TEXAS CLAYPAN AREA, SOUTHERN PART	
mlra	87B	TEXAS CLAYPAN AREA, NORTHERN PART	
mlra	88	NORTHERN MINNESOTA GLACIAL LAKE BASINS	
mlra	9	PALOUSE AND NEZ PERCE PRAIRIES	
mlra	90	CENTRAL WISCONSIN AND MINNESOTA, etc.	Central Wisconsin and Minnesota Thin Loess and Till
mlra	91	WISCONSIN AND MINNESOTA SANDY OUTWASH	
mlra	92	SUPERIOR LAKE PLAIN	
mlra	93	SUPERIOR STONY AND ROCKY, etc.	Superior Stony and Rocky Loamy Plains and Hills

mlra	94A	NORTHERN MICHIGAN AND WISCONSIN, etc.	Northern Michigan and Wisconsin Sandy Drift
mlra	94B	MICHIGAN EASTERN UPPER PENINSULA, etc.	Michigan Eastern Upper Peninsula Sandy Drift
mlra	95A	NORTHEASTERN WISCONSIN DRIFT PLAIN	
mlra	95B	SOUTHERN WISCONSIN AND NORTHERN, etc.	Southern Wisconsin and Northern Illinois Drift Plain
mlra	96	WESTERN MICHIGAN AND NORTHEASTERN, etc.	Western Michigan and Northeastern Wisconsin Fruit Belt
mlra	97	SOUTHWESTERN MICHIGAN FRUIT, etc. TRUCK	Southwestern Michigan Fruit and Truck Belt
mlra	98	SOUTHERN MICHIGAN AND NORTHERN, etc.	Southern Michigan and Northern Indiana Drift Plain
mlra	99	ERIE-HURON LAKE PLAIN	
mukind	A	Association	Two or more soils with a repeating pattern.
mukind	C	Consociation	Seventy-five percent (75%) of map unit within range of taxon.
mukind	U	Undifferentiated Group	Two or more soils that are not continuously coterminous.
mukind	X	Complex	Two or more soils that cannot be mapped separately due to map scale limitations.
order	A	ALFISOLS	
order	C	ANDISOLS	

order	D	ARIDISOLS	
order	E	ENTISOLS	
order	H	HISTOSOLS	
order	I	INCEPTISOLS	
order	M	MOLLISOLS	
order	O	OXISOLS	
order	S	SPODOSOLS	
order	U	ULTISOLS	
order	V	VERTISOLS	
ordsym	A	SLIGHT LIMITATION	
ordsym	C	CLAYEY SOILS	
ordsym	D	RESTRICTED ROOTING	
ordsym	F	FRAGMENTAL OR SKELETAL	
ordsym	R	RELIEF OR SLOPE STEEPNESS	
ordsym	S	SANDY SOILS	
ordsym	T	TOXIC SUBSTANCES	
ordsym	W	EXCESSIVE WETNESS	
ordsym	X	STONINESS OR ROCKINESS	
otherfam	01	UNCLASSIFIED	
otherfam	02	NOT USED	
otherfam	04	COATED	
otherfam	05	CRACKED	
otherfam	06	LEVEL	
otherfam	08	MICRO	
otherfam	12	ORTSTEIN	
otherfam	14	SHALLOW	
otherfam	15	SHALLOW & UNCOATED	
otherfam	16	SLOPING	
otherfam	17	SHALLOW & COATED	
otherfam	19	ORTSTEIN & SHALLOW	
otherfam	20	UNCOATED	
panhard	THICK	Cemented Pan Class - Thick	Pan is more than 3 inches if continuously indurated and more than 18 inches if discontinuous or fractured.
panhard	THIN	Cemented Pan Class - Thin	Pan is less than 3 inches if continuously indurated and less than 18 inches if discontinuous or fractured.
partsize	001	UNCLASSIFIED	
partsize	002	NOT USED	
partsize	003	CINDERY	

partsize	004	CINDERY OVER SANDY OR SANDY-SKELETAL
partsize	005	ASHY
partsize	006	CINDERY OVER LOAMY
partsize	007	ASHY OVER PUMICEOUS OR CINDERY
partsize	008	ASHY OVER LOAMY
partsize	009	ASHY-SKELETAL
partsize	010	MEDIAL
partsize	011	MEDIAL-SKELETAL
partsize	012	MEDIAL OVER PUMICEOUS OR CINDERY
partsize	013	ASHY OVER LOAMY-SKELETAL
partsize	014	MEDIAL OVER CLAYEY
partsize	015	CINDERY OVER MEDIAL-SKELETAL
partsize	016	MEDIAL OVER FRAGMENTAL
partsize	017	CINDERY OVER MEDIAL
partsize	018	MEDIAL OVER LOAMY
partsize	019	ASHY OVER MEDIAL
partsize	020	MEDIAL OVER LOAMY-SKELETAL
partsize	021	ASHY OVER SANDY OR SANDY-SKELETAL
partsize	022	MEDIAL OVER SANDY OR SANDY-SKELETAL
partsize	024	MEDIAL OVER THIXOTROPIC
partsize	026	THIXOTROPIC

partsize	027	THIXOTROPIC-SKELETAL
partsize	028	THIXOTROPIC OVER FRAGMENTAL
partsize	030	THIXOTROPIC OVER SANDY OR SANDY-SKELETAL
partsize	032	THIXOTROPIC OVER LOAMY-SKELETAL
partsize	034	THIXOTROPIC OVER LOAMY
partsize	036	FRAGMENTAL
partsize	044	SANDY-SKELETAL
partsize	046	SANDY-SKELETAL OVER LOAMY
partsize	047	SANDY-SKELETAL OVER CLAYEY
partsize	050	LOAMY-SKELETAL
partsize	051	LOAMY-SKELETAL OVER FRAGMENTAL
partsize	052	LOAMY-SKELETAL OVER SANDY
partsize	054	LOAMY-SKELETAL OVER CLAYEY
partsize	055	LOAMY-SKELETAL OR CLAYEY-SKELETAL
partsize	056	CLAYEY-SKELETAL
partsize	058	CLAYEY-SKELETAL OVER SANDY
partsize	062	SANDY
partsize	063	SANDY OR SANDY-SKELETAL
partsize	064	SANDY OVER LOAMY
partsize	066	SANDY OVER CLAYEY

partsize	068	LOAMY
partsize	072	LOAMY OVER SANDY OR SANDY-SKELETAL
partsize	080	COARSE-LOAMY
partsize	082	COARSE-LOAMY OVER FRAGMENTAL
partsize	084	COARSE-LOAMY OVER SANDY OR SANDY-SKELETAL
partsize	086	COARSE-LOAMY OVER CLAYEY
partsize	088	COARSE-SILTY
partsize	090	COARSE-SILTY OVER FRAGMENTAL
partsize	092	COARSE-SILTY OVER SANDY OR SANDY-SKELETAL
partsize	094	COARSE-SILTY OVER CLAYEY
partsize	096	FINE-LOAMY
partsize	097	FINE-LOAMY OVER PUMICEOUS OR CINDERY
partsize	098	FINE-LOAMY OVER FRAGMENTAL
partsize	100	FINE-LOAMY OVER SANDY OR SANDY-SKELETAL
partsize	102	FINE-LOAMY OVER CLAYEY
partsize	106	FINE-SILTY
partsize	108	FINE-SILTY OVER FRAGMENTAL
partsize	110	FINE-SILTY OVER SANDY OR SANDY-SKELETAL

partsize	112	FINE-SILTY OVER CLAYEY
partsize	114	CLAYEY
partsize	116	CLAYEY OVER FRAGMENTAL
partsize	118	CLAYEY OVER SANDY OR SANDY-SKELETAL
partsize	120	CLAYEY OVER LOAMY-SKELETAL
partsize	122	CLAYEY OVER FINE-SILTY
partsize	124	CLAYEY OVER LOAMY
partsize	126	FINE
partsize	134	VERY-FINE
partsize	136	HYDROUS
partsize	138	HYDROUS-PUMICEOUS
partsize	140	HYDROUS-SKELETAL
partsize	142	HYDROUS OVER CLAYEY
partsize	144	HYDROUS OVER CLAYEY-SKELETAL
partsize	146	HYDROUS OVER FRAGMENTAL
partsize	148	HYDROUS OVER LOAMY
partsize	150	HYDROUS OVER LOAMY-SKELETAL
partsize	152	HYDROUS OVER SANDY OR SANDY-SKELETAL
partsize	153	ASHY-PUMICEOUS
partsize	154	ASHY OVER MEDIAL-SKELETAL
partsize	155	MEDIAL-PUMICEOUS
partsize	158	MEDIAL OVER ASHY

partsize	160	MEDIAL OVER CLAYEY-SKELETAL	
partsize	162	MEDIAL OVER HYDROUS	
partsize	163	PUMICEOUS	
partsize	164	PUMICEOUS OR ASHY-PUMICEOUS OVER SANDY OR SANDY-SKELETAL	
partsize	165	PUMICEOUS OR ASHY-PUMICEOUS OVER LOAMY	
partsize	166	PUMICEOUS OR ASHY-PUMICEOUS OVER MEDIAL-SKELETAL	
partsize	167	PUMICEOUS OR ASHY-PUMICEOUS OVER MEDIAL	
nddur	BRIEF	Ponding Duration Class - Brief	Average duration of inundation per flood is 2 to 7 days.
pnddur	LONG	Ponding Duration Class - Long	Average duration of inundation per flood is 7 days to 1 month.
pnddur	VBREF	Ponding Duration Class - Very Brief	Average duration of inundation per flood is less than 2 days.
pnddur	VLONG	Ponding Duration Class - Very Long	Average duration of inundation per flood is more than 1 month.
primfml	0	Not Prime Farmland	Not Prime Farmland.
primfml	1	All areas are Prime Farmland	All areas are Prime Farmland.
primfml	2	Only drained areas are Prime Farmland	Only drained areas are Prime Farmland.

primfml	3	Prime Farmland if protected	Only areas protected from flooding or not frequently flooded during the growing season are prime farmland.
primfml	4	Only irrigated areas are Prime Farmland.	Only irrigated areas are Prime Farmland.
primfml	5	Prime farmland if drained/protected.	Only drained areas that are either protected from flooding or not frequently flooded during the growing season are prime farmland.
primfml	6	Drainage criteria exceeded	Only irrigated areas that have been drained are Prime Farmland.
primfml	7	Prime Farmland if irrigated and protected.	Only irrigated areas that are either protected from flooding or not frequently flooded during the growing season are prime farmland.

rating		
rating	1	FAIR
rating	10	FAVORABLE
rating	11	LIMITATION
rating	2	GOOD
rating	3	MODERATE
rating	4	POOR
rating	5	SEVERE
rating	6	SLIGHT
rating	7	UNSUITED
rating	8	PROBABLE
rating	9	IMPROBABLE
reaction	01	UNCLASSIFIED
reaction	02	NOT USED
reaction	04	ACID
reaction	08	DYSIC
reaction	10	EUIC
reaction	12	NONACID
reaction	14	NONCALCAREOUS

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restct
restct    1       Area Reclaim
restct    10      Dusty
restct    11      Erodes Easily
restct    12      Excess Sodium
restct    13      Excess Humus
restct    14      Excess Lime
restct    15      Excess Salt
restct    16      Fast Intake
restct    17      Favorable
restct    18      Flooding
restct    19      Frost Action
restct    2       Cemented Pan
restct    20      Hard To Pack
restct    21      Large Stones
restct    22      Low Strength
restct    23      No Water
restct    24      Not Needed
restct    25      Seepage
restct    26      Percs Slowly
restct    27      Piping
restct    28      Poor Outlets
restct    3       Complex Slope
restct    30      Rooting Depth
restct    31      Shrink-swell
restct    32      Slope
restct    33      Slow Intake
restct    34      Slow Refill
restct    35      Small Stones
restct    36      Thin Layer
restct    37      Too Clayey
restct    38      Too Sandy
restct    39      Unstable Fill
restct    4       Compressible
restct    40      Wetness
restct    41      Excess Fines
restct    42      Soil Blowing
restct    43      Permafrost
restct    44      Pitting
restct    45      Salty Water
restct    46      Subsides
restct    47      Too Acid
restct    48      Ponding
restct    49      Excess Sulfur
restct    5       Corrosive
restct    50      Poor Filter
restct    51      Dense Layer
restct    52      Fragile
restct    53      Slippage
restct    54      Variable
restct    55      Excess Gypsum
restct    56      Too Arid
restct    6       Cutbanks Cave
restct    7       Deep To Water
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restct	8	Depth To Rock	
restct	9	Droughty	
rockhard	HARD	Hardness Class - Hard	Excavation requires blasting or special equipment.
rockhard	SOFT	Hardness Class - Soft	Excavation can be made with trenching machines, backhoes, or small rippers.
scl	c	Capability Subclass - Climatic	Soils where the climate (moisture or temperature) is the only major hazard or limitation in their use.
scl	e	Capability Subclass - Erosion	Soils where the susceptibility to erosion is the dominant problem of hazard in their use.
scl	s	Capability Subclass - Soil Limitation	Soils have limitations such as shallowness of rooting zones, stones, low moisture-holding capacity, salinity and sodicity, etc.
scl	w	Capability Subclass - Excess Water	Soils where excess water is the dominant hazard or limitation in their use.
slopeshp	ALL	All Shapes	
slopeshp	COC	CONCAVE	Gradient decreasing down slope.
slopeshp	CVX	CONVEX	Gradient increasing down slope.
slopeshp	PLN	PLANE	Gradient linear along slope.
soiltemp	01	UNCLASSIFIED	
soiltemp	02	NOT USED	
soiltemp	04	FRIGID	

soiltemp	06	HYPERTHERMIC
soiltemp	08	ISOFRIGID
soiltemp	10	ISOHYPERTHERMIC
soiltemp	12	ISOMESIC
soiltemp	14	ISOTHERMIC
soiltemp	16	MESIC
soiltemp	18	THERMIC

state	AK	Alaska
state	AL	Alabama
state	AR	Arkansas
state	AZ	Arizona
state	CA	California
state	CO	Colorado
state	CT	Connecticut
state	CZ	Canal Zone
state	DC	District of Columbia
state	DE	Delaware
state	FL	Florida
state	GA	Georgia
state	HI	Hawaii
state	IA	Iowa
state	ID	Idaho
state	IL	Illinois
state	IN	Indiana
state	KS	Kansas
state	KY	Kentucky
state	LA	Louisiana
state	MA	Massachusetts
state	MD	Maryland
state	ME	Maine
state	MI	Michigan
state	MN	Minnesota
state	MO	Missouri
state	MS	Mississippi
state	MT	Montana
state	NC	North Carolina
state	ND	North Dakota
state	NE	Nebraska
state	NH	New Hampshire
state	NJ	New Jersey
state	NM	New Mexico
state	NV	Nevada
state	NY	New York
state	OH	Ohio
state	OK	Oklahoma
state	OR	Oregon
state	PA	Pennsylvania
state	PR	Puerto Rico
state	RI	Rhode Island
state	SC	South Carolina
state	SD	South Dakota
state	TN	Tennessee
state	TX	Texas

state	UT	Utah
state	VA	Virginia
state	VI	Virgin Islands
state	VT	Vermont
state	WA	Washington
state	WI	Wisconsin
state	WV	West Virginia
state	WY	Wyoming
subgroup	AA	TYPIC
subgroup	AB	ABRUPTIC
subgroup	AB04	ABRUPTIC ARIDIC
subgroup	AB08	ABRUPTIC CRYIC
subgroup	AB10	ABRUPTIC HAPLIC
subgroup	AB14	ABRUPTIC UDIC
subgroup	AB16	ABRUPTIC XEROLLIC
subgroup	AC	ACRIC
subgroup	AC05	ACRIC PLINTHIC
subgroup	AE	AERIC
subgroup	AE03	AERIC ARENIC
subgroup	AE05	AERIC GROSSARENIC
subgroup	AE06	AERIC HUMIC
subgroup	AE08	AERIC MOLLIC
subgroup	AE09	AERIC TROPIC
subgroup	AE10	AERIC UMBRIC
subgroup	AE12	AERIC XERIC
subgroup	AL	ALBAQUIC
subgroup	AL02	ALBAQUULTIC
subgroup	AL04	ALBIC
subgroup	AL08	ALBIC GLOSSIC
subgroup	AL09	ALBOLLIC
subgroup	AL10	ALFIC
subgroup	AL12	ALFIC ARENIC
subgroup	AL13	ALFIC ANDEPTIC
subgroup	AL14	RUPTIC-ALFIC LITHIC
subgroup	AL16	ALFIC LITHIC
subgroup	AL20	ALIC
subgroup	AL22	ALIC AQUIC
subgroup	AL24	ALIC PACHIC
subgroup	AL26	ALIC THAPTIC
subgroup	AN	ANDIC
subgroup	AN01	ANDEPTIC
subgroup	AN03	ANDAQUIC
subgroup	AN06	ANDIC DYSTRIC
subgroup	AN08	ANDIC EPIAQUIC
subgroup	AN11	ANDEPTIC GLOSSOBORIC
subgroup	AN12	ANDIC UDIC

subgroup	AN22	ANDIC USTIC
subgroup	AN24	ANDAQUEPTIC
subgroup	AN30	ANTHROPIC
subgroup	AQ	AQUALFIC
subgroup	AQ01	AQUANDIC
subgroup	AQ02	AQUENTIC
subgroup	AQ04	AQUEPTIC
subgroup	AQ06	AQUIC
subgroup	AQ08	AQUIC ARENIC
subgroup	AQ14	AQUIC DURIC
subgroup	AQ16	AQUIC DURORTHIDIC
subgroup	AQ18	AQUIC DYSTRIC
subgroup	AQ24	AQUIC HAPLIC
subgroup	AQ26	AQUIC LITHIC
subgroup	AQ31	AQUIC PSAMMENTIC
subgroup	AQ34	AQUOLLIC
subgroup	AQ36	AQUULTIC
subgroup	AR	ARENIC
subgroup	AR02	ARENIC ARIDIC
subgroup	AR03	ARENIC ORTHOXIC
subgroup	AR04	ARENIC PLINTHAQUIC
subgroup	AR06	ARENIC PLINTHIC
subgroup	AR08	ARENIC RHODIC
subgroup	AR10	ARENIC ULTIC
subgroup	AR14	ARENIC UMBRIC
subgroup	AR16	ARENIC USTALFIC
subgroup	AR18	ARENIC USTOLLIC
subgroup	AR22	ARGIAQUIC
subgroup	AR24	ARGIAQUIC XERIC
subgroup	AR26	ARGIC
subgroup	AR27	ARGIXEROLLIC
subgroup	AR28	ARGIC LITHIC
subgroup	AR30	ARGIC PACHIC
subgroup	AR32	ARGIC VERTIC
subgroup	AR33	ARGIDIC
subgroup	AR34	ARIDIC
subgroup	AR36	ARIDIC CALCIC
subgroup	AR42	ARIDIC DURIC
subgroup	AR50	ARIDIC PACHIC
subgroup	AR52	ARIDIC PETROCALCIC
subgroup	AX	ACRUDOXIC
subgroup	AX02	ACRUDOXIC HYDRIC
subgroup	AX04	ACRUDOXIC THAPTIC
subgroup	AX06	ACRUDOXIC ULTIC
subgroup	AX08	ACRUDOXIC VITRIC
subgroup	AX10	ACRAQUOXIC
subgroup	BO	BORALFIC
subgroup	BO02	BORALFIC LITHIC
subgroup	BO04	BORALFIC UDIC
subgroup	BO06	BOROLLIC
subgroup	BO08	BOROLLIC GLOSSIC
subgroup	BO10	BOROLLIC LITHIC
subgroup	BO12	BOROLLIC VERTIC
subgroup	CA	CALCIC

subgroup	CA04	CALCIC PACHIC
subgroup	CA06	CALCIORTHIDIC
subgroup	CA10	CALCIXEROLLIC
subgroup	CA20	CAMBIC
subgroup	CH	CHROMIC
subgroup	CH06	CHROMUDIC
subgroup	CR	CRYIC
subgroup	CR10	CRYIC LITHIC
subgroup	CR14	CRYIC PACHIC
subgroup	CU	CUMULIC
subgroup	CU02	CUMULIC UDIC
subgroup	CU04	CUMULIC ULTIC
subgroup	DU	DURARGIDIC
subgroup	DU02	DURIC
subgroup	DU04	DURIC HISTIC
subgroup	DU08	DURIXEROLLIC
subgroup	DU10	DURIXEROLLIC LITHIC
subgroup	DU11	DUROCHREPTIC
subgroup	DU12	DURORTHIDIC
subgroup	DU14	DURORTHIDIC XERIC
subgroup	DY02	DYSTRIC
subgroup	DY03	DYSTRIC ENTIC
subgroup	DY04	DYSTRIC FLUVENTIC
subgroup	DY06	DYSTRIC LITHIC
subgroup	DY08	DYSTROPEPTIC
subgroup	DY09	DYSTRIC VITRIC
subgroup	EN	ENTIC
subgroup	EN02	ENTIC LITHIC
subgroup	EN04	RUPTIC-ENTIC LITHIC
subgroup	EN06	ENTIC ULTIC
subgroup	EP	EPIAQUIC
subgroup	EP10	EPIAQUIC ORTHOXIC
subgroup	EU	EUTRIC
subgroup	EU02	EUTROCHREPTIC
subgroup	EU04	EUTROPEPTIC
subgroup	EU06	EUTRIC HYDRIC
subgroup	EU08	EUTRIC PACHIC
subgroup	EU10	EUTRIC THAPTIC
subgroup	EU12	EUTRIC VITRIC
subgroup	FE	FERRUDALFIC
subgroup	FI	FIBRIC
subgroup	FI02	FIBRIC TERRIC
subgroup	FL02	FLUVAQUENTIC
subgroup	FL06	FLUVENTIC
subgroup	FL12	FLUVENTIC UMBRIC
subgroup	FR10	FRAGIAQUIC
subgroup	FR18	FRAGIC
subgroup	GL02	GLOSSAQUIC
subgroup	GL04	GLOSSIC
subgroup	GL10	GLOSSIC UDIC
subgroup	GL12	GLOSSIC USTOLLIC
subgroup	GL14	GLOSSOBORALFIC
subgroup	GL16	GLOSSOBORIC
subgroup	GR	GROSSARENIC

subgroup	GR01	GROSSARENIC ENTIC
subgroup	GR04	GROSSARENIC PLINTHIC
subgroup	GY	GYPSIC
subgroup	HA	HAPLAQUODIC
subgroup	HA01	HAPLAQUIC
subgroup	HA02	HAPLIC
subgroup	HA07	HAPLOXEROLLIC
subgroup	HA09	HAPLUDIC
subgroup	HA12	HAPLUDOLLIC
subgroup	HA16	HAPLUSTOLLIC
subgroup	HE	HEMIC
subgroup	HE02	HEMIC TERRIC
subgroup	HI	HISTIC
subgroup	HI02	HISTIC LITHIC
subgroup	HI06	HISTIC PERGELIC
subgroup	HU	HUMIC
subgroup	HU02	HUMIC LITHIC
subgroup	HU05	HUMIC PERGELIC
subgroup	HU06	HUMOXIC
subgroup	HU10	HUMAQUEPTIC
subgroup	HY	HYDRIC
subgroup	HY02	HYDRIC LITHIC
subgroup	HY04	HYDRIC PACHIC
subgroup	HY06	HYDRIC THAPTIC
subgroup	HY10	HYDRAQUENTIC
subgroup	KA	KANDIC
subgroup	KH	KANHAPLIC
subgroup	LE	LEPTIC
subgroup	LI	LIMNIC
subgroup	LI02	LITHIC
subgroup	LI04	LITHIC MOLLIC
subgroup	LI05	LITHIC PETROCALCIC
subgroup	LI06	LITHIC RUPTIC-ALFIC
subgroup	LI07	LITHIC RUPTIC-ARGIC
subgroup	LI08	LITHIC RUPTIC-ENTIC XEROLLIC
subgroup	LI09	LITHIC RUPTIC-ENTIC
subgroup	LI10	LITHIC UDIC
subgroup	LI11	LITHIC RUPTIC-XERORTHENTIC
subgroup	LI12	LITHIC ULTIC
subgroup	LI13	LITHIC RUPTIC-ULTIC
subgroup	LI14	LITHIC UMBRIC
subgroup	LI15	LITHIC RUPTIC-XEROCHREPTIC
subgroup	LI16	LITHIC USTIC
subgroup	LI18	LITHIC USTOLLIC
subgroup	LI20	LITHIC VERTIC
subgroup	LI22	LITHIC XERIC
subgroup	LI24	LITHIC XEROLLIC
subgroup	MO	MOLLIC
subgroup	NA06	NATRIC
subgroup	OC	OCHREPTIC
subgroup	OR	ORTHIDIC

subgroup	OR01	ORTHIC
subgroup	OR02	ORTHOXIC
subgroup	OX	OXIC
subgroup	PA	PACHIC
subgroup	PA02	PACHIC UDIC
subgroup	PA04	PACHIC ULTIC
subgroup	PA06	PACHIC VITRIC
subgroup	PA08	PALEUSTOLLIC
subgroup	PA10	PALEXEROLLIC
subgroup	PA20	PARALITHIC VERTIC
subgroup	PE	PERGELIC
subgroup	PE01	PERGELIC RUPTIC-HISTIC
subgroup	PE02	PERGELIC SIDERIC
subgroup	PE04	PETROCALCIC
subgroup	PE06	PETROCALCIC USTALFIC
subgroup	PE08	PETROCALCIC USTOLLIC
subgroup	PE14	PETROCALCIC XEROLLIC
subgroup	PE16	PETROFERRIC
subgroup	PE20	PETROGYPSIC
subgroup	PK	PLACIC
subgroup	PK10	PLAGGEPTIC
subgroup	PK12	PLAGGIC
subgroup	PL	PLINTHAQUIC
subgroup	PL04	PLINTHIC
subgroup	PL06	PLINTHUDIC
subgroup	PS	PSAMMAQUENTIC
subgroup	PS02	PSAMMENTIC
subgroup	QU	QUARTZIPSAMMENTIC
subgroup	RE	RENDOLLIC
subgroup	RH	RHODIC
subgroup	RU02	RUPTIC-ALFIC
subgroup	RU09	RUPTIC-LITHIC
subgroup	RU11	RUPTIC-LITHIC-ENTIC
subgroup	RU15	RUPTIC-LITHIC-XEROCH REPTIC
subgroup	RU17	RUPTIC-ULTIC
subgroup	RU19	RUPTIC-VERTIC
subgroup	SA	SALORTHIDIC
subgroup	SA02	SAPRIC
subgroup	SA04	SAPRIC TERRIC
subgroup	SI	SIDERIC
subgroup	SO	SOMBRIC
subgroup	SO04	SOMBRIHUMIC
subgroup	SP	SPHAGNIC
subgroup	SP02	SPHAGNIC TERRIC
subgroup	SP04	SPODIC
subgroup	SU	SULFIC
subgroup	TE	TERRIC
subgroup	TH	THAPTIC
subgroup	TH04	THAPTO-HISTIC
subgroup	TH06	THAPTO-HISTIC TROPIC
subgroup	TO	TORRERTIC
subgroup	TO02	TORRIFLUVENTIC

subgroup	TO04	TORRIORTHENTIC
subgroup	TO06	TORRIPSAMMENTIC
subgroup	TO10	TORROXIC
subgroup	TR	TROPAQUODIC
subgroup	TR02	TROPEPTIC
subgroup	TR04	TROPIC
subgroup	UD	UDERTIC
subgroup	UD01	UDALFIC
subgroup	UD02	UDIC
subgroup	UD03	UDOLLIC
subgroup	UD05	UDORTHENTIC
subgroup	UD07	UDANDIC
subgroup	UD10	UDOXIC
suborder	AAQ	AQUALFS
suborder	ABO	BORALFS
suborder	AUD	UDALFS
suborder	AUS	USTALFS
suborder	AXE	XERALFS
suborder	CAQ	AQUANDS
suborder	CCR	CRYANDS
suborder	CTO	TORRANDS
suborder	CUD	UDANDS
suborder	CUS	USTANDS
suborder	CVI	VITRANDS
suborder	CXE	XERANDS
suborder	DAR	ARGIDS
suborder	DOR	ORTHIDS
suborder	EAQ	AQUENTS
suborder	EAR	ARENTS
suborder	EFL	FLUVENTS
suborder	EOR	ORTHENTS
suborder	EPS	PSAMMENTS
suborder	HFI	FIBRISTS
suborder	HFO	FOLISTS
suborder	HHE	HEMISTS
suborder	HSA	SAPRISTS
suborder	IAN	ANDEPTS
suborder	IAQ	AQUEPTS
suborder	IOC	OCHREPTS
suborder	ITR	TROPEPTS
suborder	IUM	UMBREPTS
suborder	MAL	ALBOLLS
suborder	MAQ	AQUOLLS
suborder	MBO	BOROLLS
suborder	MRE	RENDOLLS
suborder	MUD	UDOLLS
suborder	MUS	USTOLLS
suborder	MXE	XEROLLS
suborder	OAQ	AQUOX
suborder	OHU	HUMOX
suborder	OOR	ORTHOX
suborder	OPR	PEROX
suborder	OTO	TORROX
suborder	OUD	UDOX

suborder	OUS	USTOX
suborder	SAQ	AQUODS
suborder	SFE	FERRODS
suborder	SHU	HUMODS
suborder	SOR	ORTHODS
suborder	UAQ	AQUOLTS
suborder	UHU	HUMULTS
suborder	UUD	UDULTS
suborder	UUS	USTULTS
suborder	UXE	XERULTS
suborder	VTO	TORRERTS
suborder	VUD	UDERTS
suborder	VUS	USTERTS
suborder	VXE	XERERTS
texture	BY	Bouldery
texture	BYV	Very Bouldery
texture	BYX	Extremely Bouldery
texture	C	Clay
texture	CB	Cobbly
texture	CBA	Angular Cobbly
texture	CBV	Very Cobbly
texture	CBX	Extremely Cobbly
texture	CE	Coprogenous Earth
texture	CEM	Cemented
texture	CIND	Cinders
texture	CL	Clay Loam
texture	CN	Channery
texture	CNV	Very Channery
texture	CNX	Extremely Channery
texture	COS	Coarse Sand
texture	COSL	Coarse Sandy Loam
texture	CR	Cherty
texture	CRC	Coarse Cherty
texture	CRV	Very Cherty
texture	CRX	Extremely Cherty
texture	DE	Diotomaceous Earth
texture	FB	Fibric Material
texture	FL	Flaggy
texture	FLV	Very Flaggy
texture	FLX	Extremely Flaggy
texture	FRAG	Fragmental Material
texture	FS	Fine Sand
texture	FSL	Fine Sandy Loam
texture	G	Gravel
texture	GR	Gravelly
texture	GRC	Coarse Gravelly
texture	GRF	Fine Gravelly
texture	GRV	Very Gravelly
texture	GRX	Extremely Gravelly
texture	GYP	Gypsiferous Material
texture	HM	Hemic Material
texture	ICE	Ice or Frozen Soil
texture	IND	Indurated
texture	L	Loam

texture	LS	Loamy Sand	
texture	LVFS	Loamy Very Fine Sand	
texture	MARL	Marl	
texture	MK	Mucky	
texture	MPT	Mucky-Peat	
texture	MUCK	Muck	
texture	PEAT	Peat	
texture	PT	Peaty	
texture	RB	Rubbly	
texture	S	Sand	
texture	SC	Sandy Clay	
texture	SCL	Sandy Clay Loam	
texture	SG	Sand and Gravel	
texture	SH	Shaly	
texture	SHV	Very Shaly	
texture	SHX	Extremely Shaly	
texture	SI	Silt	
texture	SIC	Silty Clay	
texture	SICL	Silty Clay Loam	
texture	SIL	Silt Loam	
texture	SL	Sandy Loam	
texture	SP	Sapric Material	
texture	SR	Stratified	
texture	ST	Stony	
texture	STV	Very Stony	
texture	STX	Extremely Stony	
texture	SY	Slaty	
texture	SYV	Very Slaty	
texture	SYX	Extremely Slaty	
texture	UNK	Unknown	
texture	UWB	Unweathered Bedrock	
texture	VAR	Variable	
texture	VFS	Very Fine Sand	
texture	VFSL	Very Fine Sandy Loam	
texture	WB	Weathered Bedrock	
unified	CH	Group Symbol - CH	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.
unified	CL	Group Symbol - CL	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay.
unified	GC	Group Symbol - GC	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Clayey Gravel.

unified	GM	Group Symbol - GM	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.
unified	GP	Group Symbol - GP	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel.
unified	GW	Group Symbol - GW	COARSE-GRAINED SOILS, Gravels, Clean Gravels, Well-graded gravel.
unified	MH	Group Symbol - MH	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Elastic silt.
unified	ML	Group Symbol - ML	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Silt.
unified	OH	Group Symbol - OH	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Organic Clay or Organic Silt.
unified	OL	Group Symbol - OL	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Organic Clay or Organic Silt.
unified	PT	Group Symbol - PT	Highly organic soils, Peat.
unified	SC	Group Symbol - SC	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.
unified	SM	Group Symbol - SM	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.

unified	SP	Group Symbol - SP	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand.
unified	SW	Group Symbol - SW	COARSE-GRAINED SOILS, Sands, Clean Sands, Well-graded sand.
unitkind	FAMILY	FAMILY	
unitkind	FAMPHS	FAMILY PHASE	
unitkind	GRTGRP	GREAT GROUP	
unitkind	MISC	MISCELLANEOUS	
unitkind	SERIES	SERIES	
unitkind	SUBGRP	SUBGROUP	
unitkind	SUBORD	SUBORDER	
unitkind	VAR	VARIANT	
weg	1	Wind Erodibility Group 1	Surface texture - VFS,FS,S,COS. Percent aggregates - 1, Wind erodibility index - 310 t/a/y.
weg	2	Wind Erodibility Group 2	Surface texture - LVFS,LFS,LCOS,Sapric material. Percent aggregates - 10, Wind erodibility index - 134 t/a/y.
weg	3	Wind Erodibility Group 3	Surface texture - VFSL,FSL,SL,COSL. Percent aggregates - 25, Wind erodibility index - 86 t/a/y.
weg	4	Wind Erodibility Group 4	Surface Texture - C,SIC,noncalcareous CL,SICL(>35% CLAY). Percent aggregates - 25, Wind erodibility index - 86 t/a/y.
weg	4L	Wind Erodibility Group 4L	Surface texture - calcareous L/SIL/CL,SICL. Percent aggregates -25, Wind Erodibility index - 86 t/a/y.

weg	5	Wind Erodibility Group 5	Surface texture - noncalcareous L/SIL(<20% CLAY),SCL,SC. Percent aggregates 40, Wind erodibility index - 56 t/a/y.
weg	6	Wind Erodibility Group 6	Surface texture - noncalcareous L/SIL(>20% CLAY),CL(<35% CLAY). Percent aggregates - 45, Wind erodibility index - 48 t/a/y.
weg	7	Wind Erodibility Group 7	Surface texture - SI,noncalcareous SICL(<35% CLAY). Percent aggregates - 50, Wind erodibility index - 38 t/a/y.
weg	8	Wind Erodibility Group 8	Erosion not a problem.
wtkind	APPAR	Apparent water table	Water stands in a freshly dug hole.
wtkind	ARTES	Artesian water table	Water with a hydrostatic head below an impermeable layer.
wtkind	PERCH	Perched water table	Water standing above an unsaturated zone.

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